NEW REMEDIES.

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A

QUARTERLY RETROSPECT

OF

THERAPEUTICS, PHARMACY,

AND ALLIED SUBJECTS.

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NEW REMEDIES.

THERAPEUTICS.

TREATMENT OF INFLAMMATION.

BY DR. CHAS. MURCHISON.

1. Remove, if possible, the cause of the inflammation. This is the first object always to be aimed at. If it can be effected it will do more good than all the other remedies put together.

2. Prevent as far as possible any further stimulus to the inflamed part. Remove light from the inflamed eye and sound from the inflamed ear, and prevent food from entering the inflamed stomach.

3. Always endeavor to discover the constitutional peculiarities of the individual, and remember that for some varieties of inflammation we possess what may be called specific remedies. Mercury will cure the inflammations of constitutional syphilis, and colchicum with alkalies those of gout. Iodide of potassium seems to act in a specific manner upon periosteal inflammations, chlorate of potash on ulcerative stomatitis, and arsenic on certain inflammations of the skin. Much difference of opinion, as you are aware, has existed on the utility of mercury in inflammation. At one time most patients with inflammation were salivated, whereas now the drug is almost universally condemned, not only as useless, but as positively injurious. The main cause of those differences of opinion which still exist on the matter is

to be found in the non-recognition of the constitutional varieties of inflammation. In rheumatic pericarditis mercury has been proved, times without number, to be useless, and in the many inflammations to which persons with disease of the kidneys are liable it is always hurtful; but in syphilitic iritis, and syphilitic inflammation of the lungs, liver, or other organs, mercury often acts like a charm. I am speaking now of the constitutional effects of mercury when given in frequent small doses. As an occasional aperient, or in conjunction with opium to counteract its constipating effect, mercury may be useful in other forms of inflammation than the syphilitic.

4. Moderate vascular action in the inflamed part; but, in attempting to do this, keep in view the general condition of the patient. Remembering that increased vascular action is in most instances the chief phenomenon marking the origin and spread of inflammation, it is clear that one of the chief objects in treatment must be to reduce the quantity of blood, and the rapidity of its circulation in the inflamed part. The principal measures which have been recommended for this purpose are as follows:—

a. Blood-letting.—According to the manner in which the blood is drawn, blood-letting is said to be either *general* or *local*. Blood-letting, both general and local, was at one time the universal treatment for inflammation, but is now one of the rarest of surgical operations. An attempt has been made to account for this revolution in medical practice on the supposition that inflammations had changed their type; that formerly they were sthenic and required blood-letting, but that now they are asthenic and are injured by depletion. This view of the matter is untenable; and I need only now repeat that in some parts of the world it is still the fashion to treat inflammations by copious blood-letting, and that it is difficult to imagine how the type of inflammation could have changed in one country and not in another. There can be no doubt that much mischief was done in former days by copious general bleedings in inflammation. In order to diminish effectually the quantity of blood in the inflamed part through the general circulation, it is necessary to take such a quantity of blood that its quality becomes impoverished, while the heart's action is weakened and the reparative powers of the system are impaired. But the same objection does not apply to local bleedings. In many of the inflammations at or near the surface of the body which come under the notice of the surgeon, the effect of local bleeding in relieving pain, diminishing congestion, and otherwise moderating the intensity of the inflammatory process, is so immediate and marked that it is difficult to understand the modern antipathy in this country to blood-letting in any form. It is argued that the loss of even a small quantity of blood weakens the en-

tire system, and especially impairs the vitality of the inflamed part; but such statements have been chiefly advanced by writers who have had little or no experience of the effects of blood-letting themselves, and are, as I think, contrary to the evidence of our senses, while repeatedly you will have occasion to observe that a congestion of the brain or of the lungs is at once relieved by a natural hemorrhage—by a copious epistaxis or hæmoptysis. There is one important difference, however, as regards local bleeding, between an inflammation of some internal organ and one on the outer surface of the body. In the latter case there is no difficulty in understanding how local bleeding diminishes the quantity of blood in the inflamed part, but it is not so in the former. Yet, on calm consideration, you must see that it is not necessary for local depletion to act beneficially that it should do so through the general circulation. It may do so through the nearest arterial trunk, which is in common to the external surface and the inflamed organ. The intercostal artery can only transmit a certain amount of blood, and when the blood is made to flow from its superficial branches, less will go to the deeper branches. But whatever be the explanation, there can be no doubt of the clinical fact that the intensity of inflammation may often be moderated by local blood-letting, and this, too, without any injury to the patient. In inflammations, for example, of the liver or intestines, I have repeatedly observed the most marked and immediate relief follow the application of leeches to the abdomen or around the anus. Still, you must not have recourse to blood-letting in every case of inflammation. It is only in the early stages of inflammation, or when it is advancing, that you can expect it to do good. You must also abstain from blood-letting in persons of debilitated constitution, or when the inflammation has been excited by an animal poison or some other morbid condition of the blood.

b. Cold.—The common practice in this country is to apply moist heat to an inflamed part on the surface of the body from the very commencement; but it does not appear to me that any scientific reason can be given for the practice. Heat increases determination of blood to a part, and therefore seems calculated to increase the inflammation; whereas cold constricts the vessels and diminishes the supply of blood, and in Germany more especially has been found most efficacious in subduing inflammation. On this subject I would advise your reading an admirable essay by Professor Esmarch of Kiel, entitled *On the Use of Cold in Surgery*. Professor Esmarch declares that of all remedies for surgical inflammations it is most important, and that without it he would rather not be a surgeon. The continuous application of cold by means of ice-bags has also been found very efficacious in some inflammations which come under the care of the physician, as in rheumatic inflam-

mation of the joints, and inflammations of internal parts which are near the surface, as the pericardium and peritonæum. But in deep-seated inflammations, cold to the surface may act injuriously by driving blood from the skin to the inflamed part. Cold is also contra-indicated when the inflammatory process is subsiding, and when we have to deal solely with its products. Under these circumstances—

c. External Heat, in the form of poultices and fomentations, will be preferable, by means of which we hope to produce a derivation of blood from the part to the skin.

d. Counter-irritation by sinapisms, turpentine stupes, and blisters, acts in a similar manner to external heat, and is often of great utility. One caution I would give you respecting blisters: they are often applied in the early stage of inflammation; and when this is near the surface, as in pleurisy, pericarditis, or peritonitis, the irritation may be propagated inward, and increase the mischief which they are intended to allay. It is in chronic inflammations that blisters are most useful.

e. Purgatives were at one time used to a mischievous extent in all inflammations; but in inflammations of certain parts of the body they certainly act most efficaciously, by causing a derivation of blood from the inflamed part. In inflammatory affections of the liver, the best treatment is often free purgation. Purgatives in moderation are also useful as one means of eliminating from the body the products of inflammatory pyrexia.

f. Position may modify the amount of blood in any inflamed part. When a limb is inflamed, you take care not to let it hang down; when there is inflammation within the cranium, it is well to keep the head raised; and when there is inflammation of the spinal cord or its membranes, the patient had better not lie on his back.

g. Belladonna, when applied locally to an inflamed part, causes constriction of the vessels, diminishes the supply of blood, and often gives great relief; but in the case of internal inflammations there is no reason to think that belladonna entering the blood would exert its constricting effect on the vessels in the inflamed in preference to those of any other part.

5. *Aconite* is often of great value for reducing the pulse and temperature in the pyrexia of inflammation, and *antimony* is especially useful in the same way in inflammations of the mucous membrane of the air passages, where it also appears to relieve congestion by promoting free transudation to the free surface of the inflamed membrane. Antimony is contraindicated when the heart's action is weak. As regards diet and stimulants, you must be guided by the same rules in inflammation as in pyrexia. In the advanced stages of inflammation, and

especially when there is suppuration, ulceration, or gangrene, it will be necessary to give abundance of nutritious food and to stimulate freely. Under these circumstances, also, benefit will be derived from quinine, iron, and the mineral acids.

6. *Sedatives*, but particularly *opium* and its preparations, are often of great use in inflammations, for relieving pain, procuring sleep, keeping the inflamed parts at rest, and rendering them less irritable. In acute inflammation of the peritonæum, opium in large and repeated doses is a remedy on which we mainly rely; but opium in any form ought never to be given in inflammation of the kidneys, and only with the greatest caution in inflammatory affections of the lungs. In the former case it increases the difficulty which the inflamed kidneys have already to contend with in eliminating the products of pyrexial metamorphosis; in the latter, it leads to the accumulation in the bronchi of inflammatory products, and thus favors a fatal termination by apnœa.

7. Lastly, in the treatment of inflammations you must ever keep in view the dangers likely to arise from derangement of the functions of the inflamed part. In gastritis you will beware of irritating the stomach by drugs or by inappropriate food or stimulants, and in extreme cases you will give nutriment for a time entirely by the rectum; in enteritis you will check diarrhœa; in laryngitis you will be prepared to admit air to the lungs by tracheotomy; in accumulations of inflammatory products in the pleura you will consider the propriety of paracentesis; and when the lungs are so extensively inflamed or congested that the portion which remains free does not suffice to transmit the blood of the entire body, and the patient is threatened with asphyxia, you must not scruple in having recourse to venesection.—*British Med. Journal.*

STUDY OF THE PHYSIOLOGICAL ACTION OF DIGITALIS AND DIGITALIN.

BY DR. RUDOLF BOEHM.

In the February number (1872) of *Pflüger's Archiv für die Gesammte Physiologie* is a paper with the above title, of some 40 pages in length, of which we give the following extended abstract:—

Directly after the discovery by Weber and Ludwig of the inhibitory action of the vagus, appeared Traube's first work on digitalis,* in which he asserted that in medicinal doses it excited, in large doses first

* Versuche über die Wirkung der Digitalis, abgedruckt aus dem 2 Jahrgang der Charité Annalen, 1851.

excited and then paralyzed the heart's regulo-motor nervous system, and that in the latter case the musculo-motor nervous system partook of the paralysis.

Near the same time Stannius * experimented upon frogs, and came to the conclusion that in these animals only the heart was affected by digitalis and that it in a short time came to a standstill, and could not be re-excited, a result that Stannius attributed to paralysis of the heart's muscle. Traube asserted, however, that such paralysis failed entirely to be possible, because after the first pulse-slowing there was a period of rapid pulse before the development of the paralysis. Further, it seemed impossible to him to believe otherwise than that the regulo-motor nervous system was excited, for when the vagus had been previously cut, in most cases digitalis failed to slow the pulse. In some instances this was not the case, a fact which Traube explained by the supposition that the single section of the vagus failed entirely in such animals to separate the heart from the inhibitory nerve centres.

After the dissertation of Lenz † Traube ‡ published a second memoir, in which he arrived at the following conclusions:—

In the general action of the poison on the circulation a stage is observed, first, in which the pulse-frequency sinks, and the pressure of the aortic system rises. After this comes a stage in which both pulse-frequency and pressure are below normal, and then a third stage, in which the pulse becomes much more frequent than normal, and the pressure in the arterial system sinks.

If a very great dose of the poison be given, the alterations in the pulse follow one another so rapidly, that the pressure begins to sink first, after the pulse-frequency has risen above the normal point, and the stage is wanting in which both pulse-frequency and pressure are below normal. Traube believed that this rising of the pressure with slowing of the heart shows that digitalis excites the musculo-motor system of the heart at the same time that it does the regulating centres. This theory he afterwards re-asserted,§ with details of experiments in which, after previous cutting of the vagi, digitalis produced a marked rise in arterial pressure.

Winogradoff‖ asserted, in opposition to Traube, that the arterial

* Untersuchung über die Wirkung der Digitalis und der Digitalin. Archiv für physiol. Heilkunde. X. Jahrg. II. Heft.

† Experimenta de ratione inter pulsus frequentiam sanguinis pressionem lateralem et sanguinis fluentes celeritatem obtinente. Dorpat, 1853.

‡ Ueber die Veränderungen, welche die Spannung des Aorten systems unter dem Einfluss der Digitalis. erleidet. Gesammt. Beiträge, etc.

§ Zur Theorie der Digitalis Wirkung. Allgem. Medic. Central-Zeitung. Jahrg. xxx. Nov., 1861.

‖ Ueber die Einwirkung des Digitalin auf den Stoffewechsel und den Mittlern Blutdruck in den Arterien. Virchow's Archives, p. 457. 1861.

pressure in the dog was not materially affected by large doses of digitalin, and only by poisonous doses decreased, whilst the pulse after a previous slowing became much more rapid. This effect upon the pulse Winogradoff thinks cannot be explained by excitement of vagus centres, as such slowing of the pulse should be accompanied with sinking of the blood pressure.

In the year 1862, Dybkowsky and Pelikan * affirmed the following results obtained from experiments upon frogs:—

1. That digitalin produces a systolic arrest of the heart, after which the frog still retains his powers of motion.
2. The auricles remain in diastole.
3. An excitement of the heart nerves may precede the arrest.
4. That digitalin acts independently of the cerebro-spinal centres.
5. The vagus still has influence, as well immediately after the poisoning as during the stage of decided poisoning.
6. Whilst the most powerful current has no influence upon the contracted ventricle, galvanization of the venous sinus acts as in normal frogs upon the heart, which remains relaxed and full of blood.

Without mentioning this work Traube,† in a later memoir, states that digitalis must have an influence on the heart muscle, as when the thorax is opened, after poisoning by it, the heart is found contracted and insensible.

Marmé ‡ obtained similar results to Traube. Von Bezold§ made many experiments upon rabbits, with section of the vagus and cervical sympathetic, with the conclusion that digitalis raises the tone of heart nerves in the cervical sympathetic. These heart nerves might in the rabbit be either of a checking or stimulating nature, on which account digitalis produced both early pulse-slowing and early increase in the rapidity of the pulse.

A. B. Meyer,‖ who experimented on frogs, expressed the opinion that the slowing of the pulse by digitalis was owing to a secondary reflex excitement of vagi centres by the increased intracardiac pressure.

Very recently J. Milner Fothergill,¶ upon very sparse experimental evidence, has expressed the opinion that the nervous system has very little to do with the action of digitalis on the heart.

When the experimental portion of this paper was nearly finished,

* Physiologische Untersuchungen über die Wirkungen einiger Herzgifte. Zeitschrift für Wissenschaft. Zoologie. 1862.

† Ueber die Einwirkung des Kali Nitricum auf die Herzthätigkeit. Allgemeine Medicin. Central-Zeitung, July, 1864.

‡ Henle and Pfeuffer, Zeitschrift für rationelle Med. 1865.

§ Untersuchungen über die Innervation des Herzens. Leipzig, 1863.

‖ Arbeiten aus dem Physiolog. Institut. zu Zurich.

¶ The Hastings Prize Essay, 1870. On Digitalis, etc.

Traube gave the results of some six experiments to the Berlin Medical Society.

He had found that in frogs whose cervical spinal cord was cut, digitalis produced very marked lowering of the pulse with great lessening of arterial pressure, and believed this to show that the slowing of the pulse was not due to the increased arterial pressure.

Ackerman, in 1870, also supported the vagus view, by finding that when atropia had been previously given, digitalis failed to slow the pulse.

After this summary of previous work, Dr. Boehm enters upon the account of his own work. He found that when 1—3 drops of a 5 per cent. solution of digitalin were dropped on the heart of a frog in 3—5 minutes, the diastole was seen to be broken intwo by a rudimentary systole, so that the auricles had great difficulty in filling the ventricles, and occasionally burst themselves in the effort. The systole of the ventricles was also much more energetic than normal, the whole muscle becoming white from its rigid contraction. The imperfect, rudimentary systole reduced the number of the heart's beats to one-half, and in 5—15 minutes there was total systolic arrest of the ventricles, the auricles laboring for some time in vain to fill them, but exciting merely rhythmical waves of motion in the ventricular walls.

If very small doses of the digitalis were employed, the heart's action became after a time very irregular, portions of the ventricle remaining in a condition of systole during the whole of a general diastolic movement, or even through several movements. After a time the motions became so utterly irregular that it was impossible to distinguish the succession of the movements, and this condition continued for hours.

In a few rare cases, after moderate doses of the digitalis, the diastole was remarkably lengthened, and even diastolic arrest of the heart was made out, but this arrest was always of short duration.

An *increase* in the number of pulsations per minute was never present in any stage, and the action on the heart with a marked increase of respiratory movements were the only symptoms ever induced.

In curarized frogs the action of digitalis was as usual.

When muscarin was used Dr. Boehm found, as stated by Schneideberg, that it was possible to re-excite the heart arrested in diastole by small doses of digitalis. If *muscarin* was put early on the arrested heart, it overcame the digitalis action, but if the systolic standstill had existed for some time, muscarin was powerless.

Delphinin in most cases would restore the action of the heart arrested in systole by the digitalis; in other cases it had no influence on the symptoms produced by the latter.

The next experiments were directed to the determination of the action on the nervous system, and it was found that it made no difference if both vagi were cut, or if the cerebro-spinal nerve was destroyed. It was found, however, that the vagus became more excitable, for electrical currents too weak to show any results in the normal heart, in digitalis poisoning were sufficient to prolong the diastole and even to cause diastolic arrest, and the vagus arrest, which normally should not continue more than five seconds, in the digitalized heart stretched over from 30—120 seconds.

As the result of these experiments, Dr. Boehm concludes that in the frog:—

1. Digitalin produces a condition of excitement in the controlling centres in the heart, and hence the slowing of the pulse and increased power of the vagus.

2. It has a peculiar specific influence on the heart's muscle, whose contractions are strengthened in the first stage, become irregular in the second, and in the third a condition of peculiar rigidity is induced.

The investigation was next directed to determining whether the small arteries are affected by digitalis. Dr. Boehm states that he has very often examined the small arteries of the mesentery of frogs, studying for hours the action of digitalis upon them, but always with negative results. He also connected a manometer with the aorta of the frog, and found that the blood pressure was increased $\frac{1}{5}$—$\frac{1}{4}$ by small doses of digitalis, but if the dose was repeated the pressure sank.

This experiment was repeated in the manner of Blasius (modified from Fick), in which the isolated heart is made to pump serum through a glass tube. The method is elaborately explained by Dr. Boehm, but we have only space for the result, which was a constant one. It was found that the heart's work, immediately after the application of the digitalis, underwent a greater or less increase. If the amount of the drug were small this increase was very persistent. With larger doses the first increase soon gave way to diminished power. Finally, the heart stood still with every drop of serum squeezed out of its ventricles. The individual beat of the heart was greatly increased in power, in some instances very nearly doubled. The loss of power in the second stage of action appeared to be due partly to the great slowing of the heart, partly to the incompleteness of the diastole and the consequent imperfect filling of the ventricles.

Dr. Boehm, after detailing the experiments from which the above results were obtained, enters upon an account of his experiments upon dogs, rabbits, and cats. He found, in agreement with Traube and opposition to Winogradoff, that after moderate doses of (10,001—0,005

grms.) digitalin there was regularly a decided rising of ($\frac{1}{6}$—$\frac{1}{4}$) the arterial pressure. If the dose were not repeated, this continued to the close, but if it were repeated, or larger doses were given at first, there was decided falling of the arterial pressure. The slowing of the pulse was always unmistakable. The single heart-beat was in strict agreement with the double beat of the frog's heart, the pulse being very markedly dicrotic, so that the diastole was evidently interrupted by an imperfect systolic effort. Some time after the poisoning, the cardiac tracing showed great irregularity, and at times there would be 2 or 3 systoles before a well-pronounced perfect diastole would be brought about. This condition Dr. Boehm believes similar to what is sometimes spoken of in digitalis poisoning as the double or triple pulse, and to be dependent upon the irritability of the ventricle being so great that it is thrown into systolic contraction when it is half full of blood, so that there must be a partial exhaustion of the heart before a full diastole can occur.

In other instances the course of the cardiac tracing indicated that when the heart had half sunk back into the diastolic state, it remained for some time in this condition of semi-contraction before passing into full diastole. In other cases, the heart appeared to stand still for some time, and the tracing showed that this was during systole. Such cases no doubt correspond to the so-called interrupted (aussetzenden) pulse of digitalis poisoning. Whilst in the beginning of the action of the drug the pulse curve is not very different from normal, afterwards it becomes very peculiar. The ascending line is no longer immediately succeeded by the descending, but by a horizontal trace, so as to give a ridge-like appearance. There appears to be no doubt but that these phenomena are due to anomalies in cardiac muscular contractions, and it seems very difficult to detect in them any influence of the cardiac nerve centres.

As to the relation of the digitalis to the controlling nerve centres, Dr. Boehm believes that Traube is right.

Dr. Boehm, in experiments upon rabbits, found, as Traube had stated, that after section of the cervical spinal cord, there was no rise in the arterial pressure upon the injection of digitalis.

Bezold has published * an experiment in which, after the rise of the pressure under the influence of digitalis, section of the spinal cord was followed by immediate sinking of it below normal.

Dr. Boehm thinks that, although these results show that digitalis has not the power to overcome the sinking of the pulse consequent upon separating the arterioles from the vaso-motor centre, they do not prove that the drug has any influence upon the lumen of the vessels in the

* Untersuchungen über die Innervation des Herzens. II. Abth., p. 205.

normal state. Why they do not, does not, however, appear to be very clearly made out or stated by Dr. Boehm.

MICROSCOPIC STUDIES OF THE INFLUENCE OF DIGITALIS, VERATRIN, AND ERGOT ON THE CIRCULATION.

C. Boldt has published an inaugural dissertation with the above title, in which he gives the account of experiments performed on frogs by Cohnheim's method. Curarized frogs had their flanks opened, and the intestine and mesentery having been drawn out, the animal was laid upon his back, and the circulation studied. Hypodermic injections of digitalin, veratrin, and ergot were employed. Twelve experiments with digitalin led to the result that it, in the first instance, produces a strong contraction of the peripheral vessels, which is followed by a marked slowing of the pulse, which is, if the dose be large enough, followed by laming of the heart, as shown by smallness and irregularity and rapidity of the pulse, with a vibrating or undulating blood stream; and finally, after a short increase in rapidity, the pulse falls with great suddenness, and then, with general vaso-motor paralysis, the animal dies.

Eleven experiments with *veratrin* showed that it directly paralyzes heart and arterial muscles, there being an immediate lowering of the pulse-frequency, the size and force of its wave, and an increase in the lumen of the vessels.

Twelve experiments with *ergotin* resulted in a constant lowering of the pulse rapidity, by both large and small doses, accompanied by peristaltic or wave-like contractions and expansions of the artery.—*Schmidt's Jahrbucher*, No. 1, March 12, 1872.

ON THE RELATIVE POWER OF VARIOUS SUBSTANCES IN PREVENTING PUTREFACTION, AND THE DEVELOPMENT OF PROTOPLASMIC AND FUNGUS LIFE.

BY DR. F. CRACE CALVERT.

Dr. Calvert read a paper with the above title before the Royal Society, an abstract of which is in the *Chemical News* of March 28, from which the following is condensed. Dr. Calvert used small test-tubes, previously cleansed and heated, in each of which were put one part of white of egg, four parts of distilled water, and 1-1000th part of the drug. The tubes were kept at a uniform temperature of 12.5° C.

to 15.5° C., and examined daily, with a power of 800 diameters, for 39 days, and occasionally for 80 days. The results were as follows:—

	Days required for development. Fungi.	Vibrios.
1. STANDARD SOLUTION	18	12
2. ACIDS.		
Sulphurous acid	21	11
Sulphuric acid	9	9
Nitric acid	10	10
Arsenious acid	18	22
Acetic acid	9	30
Prussic acid	None.	9
3. ALKALIES.		
Caustic soda	18	24
Caustic potash	16	26
Caustic ammonia	20	24
Caustic lime	None.	13
4. CHLORINE COMPOUNDS.		
Solution of chlorine	22	7
Chloride of sodium	19	14
Chloride of calcium	18	7
Chloride of aluminium	21	10
Chloride of zinc	53	None.
Bichloride of mercury	81	None.
Chloride of lime	16	9
Chlorate of potash	19	17
5. SULPHUR COMPOUNDS.		
Sulphate of lime	19	9
Protosulphate of iron	15	7
Bisulphite of lime	18	11
Hyposulphite of soda	18	11
6. PHOSPHATES.		
Phosphate of soda	17	13
Phosphate of lime	22	7
7. PERMANGANATE OF POTASH	22	9
8. TAR SERIES.		
Carbolic acid	None.	None.
Cresylic acid	None.	None.
9. SULPHO-CARBOLATES.		
Sulpho-carbolate of potash	17	18
Sulpho-carbolate of soda	19	18
Sulpho-carbolate of zinc	17	None.
10.		
Sulphate of quinine	None.	25
Picric acid	19	17
Pepper	None.	8
Turpentine	42	14
Charcoal	21	9

These substances might be arranged under four heads:—

First. Those which prevent the development of all life, including only carbolic and cresylic acid.

Second. Those which prevent the development of vibrional life, but not of fungal life, including only bichloride of mercury and chloride of zinc.

Third. Those which prevent the development of fungi, but not of vibrios, including lime, pepper, turpentine, sulphate of quinine, and prussic acid.

Fourth. Those which do not prevent the development of either forms of life, including the remaining 25 substances.

NITRITE OF AMYL IN EPILEPSY.

Dr. S. Weir Mitchell has a short paper on this subject in the Philadelphia *Medical Times* of April 15. He reports a case of most severe epilepsy, following sexual excesses, in which the convulsion was always succeeded by spasm of the arm. After the failure of all other remedies, Dr. Mitchell says:—

"As a last resort, I gave him in a very small phial three or four drops of nitrite of amyl, and showed him how to inhale it by putting the open phial up one nostril while with one finger he closed the other, and then made a few full inspirations. The first attempt failed, because, as he said, the spasm of the left limb made him nervous. On the second occasion he began to breathe it the instant the fingers twitched,—having pulled the cork of the phial with his teeth. In a few moments he felt his face flush, the carotids beat violently, his head felt full, and, the spasm ceasing, the attack at once, and for the first time in his experience, was cut short. Four days later he thus cut short another attack; and the experiment has since succeeded in eleven fits, and failed, from too late use of the nitrite, in two. Moreover, the attacks have lessened in frequency, and now come on only once in ten to twenty days."

Dr. Mitchell remarks as follows:—

In a second instance of epilepsy, with aura proceeding from the right hand, the nitrite of amyl has been successfully used in two attacks; but commonly the cerebral phenomena in this, as in most cases, follow too soon to be of value,—or, rather, too soon to allow of time for the nitrite to affect the intracranial circulation.

This must, unhappily, be the case in most epilepsies; but in all which have an aura or local spasm distant enough in time from the cerebral symptoms, it may be of value, and ought certainly to be employed.

In another class of rare cases it may also prove of service. There are certain epilepsies in which the spasms last for hours, one fit following another. In these I commonly employ, with success, injections under the skin of bromide of lithium, using thirty or forty grains in three or four localities; but I have twice checked these attacks at once by inhalations of the nitrite of amyl. In one of

them there was a second fit, but no more,—which was unusual. In the other, which lasts always several hours, I used the nitrite at the close of an hour, in the third convulsion. Relaxation instantly occurred; the fit passed off, and no other followed. Ether has been frequently employed in this case, but it merely mitigates the attack, and its use has to be kept up for hours.

NOTE RELATIVE TO THE BROMIDE OF CALCIUM.

BY WILLIAM A. HAMMOND, M.D.

Bromide of calcium is a white crystalline substance, very soluble in water, and readily decomposing on exposure to the atmosphere for a few minutes. The aqueous solution is at first colorless, but it soon becomes tawny from a portion of the bromide being set free. Its taste is similar to that of the bromide of potassium, though somewhat more pungent and disagreeable.

The formula of bromide of calcium is BrCa, and its combining equivalent is 98 (Br. 78, Ca. 20=98); 100 grains, therefore, contain about 79.5 grains of bromide.

Desiring to test the therapeutical value of this compound, I desired Dr. Neergaard to procure it. During the last few months I have used it in a number of cases in which the bromides were indicated, and have become satisfied of its great efficiency as a medical agent.

The dose is from fifteen to thirty grains or more for an adult. It is especially useful in those cases in which speedy action is desirable, as, owing to its instability, the bromine is readily set free, and its peculiar action on the organism obtained more promptly than when either of the other bromides is administered. Chief among these effects is its hypnotic influence, and hence the bromide of calcium is particularly beneficial in cases of delirium tremens, or in the insomnia resulting from intense mental labor or excitement.

Thus, I gave a gentleman who, owing to business anxieties, had not slept for several nights, and who was in a state of great excitement, a single dose of thirty grains. He soon fell into a sound sleep, which lasted for seven hours. The next night, as he was wakeful, I gave him a like dose of bromide of potassium, but it was without effect, and he remained awake the whole night. The subsequent night he was as indisposed to sleep as he ever had been, but a dose of thirty grains of bromide of calcium gave him eight hours sound sleep, and he awoke refreshed and with all unpleasant cerebral symptoms—pain, vertigo, and confusion of ideas—entirely gone.

In a number of other instances a single dose has sufficed to induce sleep, a result which very rarely follows the administration of one dose of any of the other bromides.

In those exhausted conditions of the nervous system attended with great irritability, such as are frequently met with in hysterical women, and which are indicated by headache, vertigo, insomnia, and a mental condition of extreme excitement, bromide of calcium has proved in my hands of decided service. Combined with the syrup of the lacto-phosphate of lime, it scarcely leaves anything to be desired. An eligible formula is—℞ Calcii bromidi, ʒ j.; syrup. lact. phos. calc., ʒ iv. M. ft. sol. Dose, a teaspoonful three times a day in a little water.

In epilepsy I have thus far seen no reason for preferring it to the bromide of potassium or sodium, except in those cases in which the paroxysms are very frequent, or in cases occurring in very young infants; of these latter, several, which had previously resisted the bromide of potassium, have yielded to the bromide of calcium. It does not appear to cause acne to anything like the extent of the bromide of potassium or of sodium.

My object in writing this note is simply to call attention to a remedy which promises well.—*New York Medical Journal*, December, 1871.

ERGOT.

In the Dublin *Med. Journal* for April, 1872, is a paper on Ergot by Dr. Jno. Denham, who states that he has experimented clinically with ergot to a considerable extent, and that in leucorrhœa it occasionally appears to be of service—that in amenorrhœa it never does good. In many cases of menorrhagia it has been very serviceable, and when polypi are present sometimes promotes their expulsion. Whenever, however, the hemorrhage is due to fibroids, the ergot has been of no service. His views of its action on pregnancy may be summed as follows:—

When given, even in large doses, before the full period, it does not produce abortion, but when abortion has fairly commenced it hastens it. It has no action on the *fœtus in utero*. When given in the second stage it hastens it, but at great mechanical risk to the child. When given near the close of the second stage of labor, it acts most favorably in the prevention of *post-partum hemorrhage*. In post-partum hemorrhage, either before or after the expulsion of the placenta, it is of no value. In the discussion which followed the reading of this paper before the Dublin Obstetrical Society, several gentlemen differed from Dr. Denham, bearing witness to the value of the drug in *post-partum hemorrhage*.

DIABETES.

Dr. J. T. Shearer states (*Medical and Surgical Reporter*) that he has succeeded in curing five cases of confirmed diabetes by a method of treatment which the following, taken verbatim from his paper, will serve to illustrate:—

Owing to the great debility of the patient, I commenced the new treatment by prescribing as follows:—

℞ Tannic acid.....grs. v.
Opii pulv.....gr. ss. M.

Sig.—To be taken at 9 A.M., 3 P.M., and bedtime, and tinct. ergot ʒ j., to be taken before each meal in water.

Also:—

℞ Veratriæ..... ʒ j.
Ungu. cetacei..... ʒ j. M.

Sig.—The size of a cherry, to be well rubbed along the spine every morning and evening.

I directed him to abstain as much as possible from animal food, confine himself to a vegetable diet, and to procure lager beer or ale to drink instead of water; and if either became nauseous to him, to alternate with tea, or whiskey and water.

I increased the acid grs. v. every eight or ten days during the three following months, until I considered a cure permanently effected; but the opium and ergot were not increased every time.

Within six weeks from the commencement of my treatment this patient's abdomen had become sensibly diminished; the hard band or cord which had passed over it had disappeared, and it began to have a natural appearance and feel; his weight had increased during that time quite rapidly; being weighed it was found to be nearly 105 pounds, an increase of nearly 15 pounds in less than six weeks, while the liquid drunk and urine voided had been reduced from two and one-half gallons in thirteen hours to less than one gallon in the same time.

At this time I was giving tannic acid in xxv. gr. doses, with opii gr. j. and ergot ʒ iij.

If this was "tom tom" treatment it was very effective, certainly.

Before the first of December I commenced giving the medicine four times daily, and, excepting the opium, in increased quantity, at intervals of ten days. By the first week in January, 1872, the patient had entirely recovered; he was able to work without experiencing great or unusual fatigue, and his weight had increased to 125 pounds.

I then commenced diminishing the quantity of medicine and number of doses at short intervals till the beginning of the present month (February), when I ceased administering it entirely; every trace of the

disease having disappeared, and his weight having increased to 130 pounds; that being a greater weight, he informed me, than he had ever reached prior to that time.

ON THE USE OF PHOSPHORUS IN CERTAIN DISEASES OF THE SKIN.

Dr. H. Eames has a paper with the above caption in the *Dublin Journal of Medical Science* for Jan. 1, 1872. He uses the drug in the form of solution in olive oil, ten grains to the ounce. The dose is five to ten drops three times a day, after meals, and is best given in gelatin capsule. Dr. Eames details a very severe and obstinate case of acne, cured; three cases of lupus, in which all other known forms of treatment had been proved powerless, cured; as well as several cases of scrofuloderma and of psoriasis in which speedy cures were effected. In the latter disease he states that, after the failure of arsenic, he has habitually found phosphorus very efficacious.

He says—I have found that phosphorus produces a coated state of the tongue, not unlike the silvery tongue which follows the prolonged use of arsenic. Loss of appetite, mental depression, and bodily weakness are also induced much earlier in some cases than others, but are to be watched for in all cases in which the drug is given. On the earlier appearance of dyspeptic symptoms I now discontinue its use and administer some of the mineral acids.

Many patients have mentioned that, some two or three minutes after taking the medicine, a pleasant sensation of warmth is felt through the entire body. I have not ascertained that any aphrodisiac effect is induced, although I have frequently inquired for it. A slight diaphoresis is observed occasionally. Diarrhœa was not induced in any of my cases. The amount of urine in some was slightly increased. Analysis detected nothing abnormal.

Dr. Eames further says that he has found phosphorus of very great service in eczema of the scalp, with enlargement of the glands, stating that he has seen in many cases a copious eczematous eruption behind the ears and on the head, combined with greatly enlarged *glandulæ concatenatæ*, disappear in a few weeks after this treatment had been adopted, the glands being also quickly restored to their normal size.

XYLOL.

This hydrocarbon, it seems, has been used in Berlin in the treatment of small-pox with good results.

The *Berlin Klinische Wochenschrift* states that Dr. Zuelzer, of the

Charité Hospital, had administered xylol in cases of small-pox, with the most complete success. It is given in doses of from 3 to 5 drops for children, 10 to 15 drops for adults, every hour to every three hours: as much as a teaspoonful at a time has been taken. The most convenient form of taking it is in capsules containing 3, 5, 8, and 12 drops each.

The theory has been broached that xylol is taken up by the blood, and acts as a disinfectant. Absolute purity of the xylol is necessary, as toluol and other analogous compounds do not possess this peculiar action, and it seems there are some practical difficulties in obtaining xylol absolutely pure.

Xylol, or xylene, C_8H_{10}, was first separated from coal naphtha by Dr. Hugo Müller; it is obtained by fractional distillation until a distillate is obtained of about 140° C. boiling-point; this is mixed with sulphuric acid, which dissolves xylol, forming xylol sulphuric acid; this acid is decomposed by dry distillation, and the xylol thus obtained is further purified. Pure xylol is colorless, it has a faint odor, somewhat like benzol, but different; boiling-point 139° C., sp. gr. 806.—*Med. Press and Circular*, Feb. 7, 1872.

LOCAL ACTION OF HYDRATE OF CHLORAL.

A WRITER in the *Scientific American* states that chloral applied locally is an exceedingly active counter-irritant, producing, if used carelessly, very obstinate ulcerations. He says: "When applied, the burning is precisely like that produced by a cataplasm of strong mustard; but, at the same time, a sedative action is perceived, which somewhat neutralizes the smarting, while it does not prevent an excessive irritation of the skin. It does not blister, but the part the chloral has been applied to becomes exceedingly inflamed, and more or less swollen; and, according to the length of time of application, shows a merely reddened skin, or a suppuration of several weeks' duration.

"I give you my mode of application: Take a piece of fresh adhesive plaster, of the size wanted, and crush fine, on its surface, with an ivory spatula, enough of the crystals of the chloral to powder the piece of adhesive plaster quite evenly; use the edge of the spatula to take off the chloral where it is more than a mere dust in thickness, but distribute evenly, leaving one third of an inch margin for adhesion: heat the back of the plaster for an instant only, and apply. Leave it on about half an hour as a rubefacient, six hours as an irritant. To produce suppuration, put the chloral on the plaster in large quantities, and leave on from twenty-four to thirty-six hours; on its with-

drawal, apply a stimulating salve, and afterwards heal with cerate. For an escharotic effect, apply the chloral, thickly spread, and, after twelve hours, repeat the application, if necessary.

ON THE USE OF THE LACTO-PHOSPHATE OF LIME AS AN ANALEPTIC MEDICINE IN ADYNAMIC FEVERS IN CONVALESCENCE.

Under the above caption Dr. R. Blackie, of Paris, has a paper of considerable therapeutical interest in the *London Practitioner* of February, 1872. He claims for the preparation that it is almost a physiological necessity, and states that the vital activity of animals and their temperature are proportionate to the quantity of lime phosphate they contain; so that from the bird to the man, and from man to the mollusk, the quantity of the salt follows a descending course. He deprived a pigeon of almost all phosphate of lime in its food, and it soon lost all its liveliness, its appetite, a notable portion of its flesh and weight, and excreted more phosphate than it took in. The addition of the phosphate to its food was very shortly followed by return to health. He also asserts that certainly in vegetables and probably in animals the phosphate of lime is really associated with the most active nitrogenous living matter. He commends it highly in youths whose development had been stopped without any apparent adequate reason, stating that under its use growth and health rapidly reappeared. Also in the general atony that follows protracted fevers. Likewise in marasmus in children, when at dentition or puberty food is disgusting, general atony present, and diarrhœa and constipation show the involvement of digestion. He believes it to be very useful in the adynamic stage of some pneumonias, and even in the acute stage of typhoid fever, stating that he found it very efficient in the treatment of the severe epidemic of adynamic enteric fever during the siege of Paris.

ON THE USE OF NITRATE OF SILVER IN CERTAIN LOCAL INFLAMMATIONS.

Dr. Geo. Crowell commends most highly the application of nitrate of silver in local inflammation, such as boils, carbuncles, testitis. In the latter disease he applies it in the following manner:—The scrotum is made to present a tolerably smooth surface of skin over the swollen testicle, which surface is then wetted by means of a piece of lint previously dipped in water, and the solid nitrate of silver is then

carefully and equally applied over the whole surface, suspensory bandage and rest being enjoined. In from two to six hours the pain has disappeared, and after this a gradual diminution of the swelling occurs. In boils and similar phlegmons he uses the solid stick or the strong solution (20 grs. to drachm), as originally advised by Mr. Jno. Higginbottom.—*London Practitioner*, Feb., 1872.

TREATMENT OF ALVEOLAR HEMORRHAGE.

In the *Dental Cosmos* for February, 1872, is an article upon this subject, by the editor, Jas. W. White. He enjoins the various constitutional and hygienic measures which are to be used in the treatment of all hemorrhages, and says of the local measures:—

Various methods have been suggested for the employment of pressure to close the mouths of the bleeding vessels: with teeth having but one root, the application of a styptic and the reinsertion of the tooth; the filling of the socket, after the employment of an astringent, with plaster-of-Paris mixed with water, or in powder, and allowing it to absorb moisture enough to cause it to set; the application of a small pellet, containing a styptic in powder or solution, and subsequently filling the space with cotton, saturated with sandarac varnish. Compresses of wood or cork, held in place by the opposing teeth, assisted by bandaging the jaw, have also been employed successfully. In cases where the hemorrhage is capillary, a saddle, made of cork, with a V-shaped slot cut in it, so that it will contract or clamp the margins of the socket, has been found very efficient. The most efficient saddle for the purpose is one made of gutta-percha, formed while in a plastic state to fit the space,—subsequently removed and contracted somewhat by pressure, then cooled and sprung over the parts. This method is easy of application, and, especially where there are adjoining teeth, the most complete of any plan yet suggested for making uniform pressure.

Of the various vegetable astringents, tannin is, perhaps, the most efficient, and has the advantage of forming a clot which is insoluble in any of the constituents of the blood. The best method of applying it is in powder, on small pieces of lint, packed, one after the other, into the socket. An admirable application is styptic colloid. Of the mineral astringents, alum, either in powder or saturate solution, will control most cases of venus or capillary hemorrhage. In severe cases, nitric acid seems to be less objectionable than the preparations of iron or the lunar caustic, because less liable to cause slough and the secondary hemorrhage which follows. Tannin, or alum, with pressure by

the gutta-percha saddle, will almost surely check any alveolar hemorrhage except that caused by an open artery, and will frequently control that. These failing, the actual cautery promises the promptest relief.

INHALATIONS OF CALOMEL.

At the meeting of the Medical Society of London, Mr. Henry Lee said that he was the first to introduce calomel baths to the notice of the profession, and before doing so had labored to find out the cause of failure of the cinnabar and gray oxide of mercury. The cinnabar is decomposed by heat, and gives off sulphurous acid, which irritates the lungs; the gray oxide is decomposed, and, absorbing oxygen, becomes the binoxide, and acts more powerfully. These remedies acted sometimes with small effect, sometimes with great effect. Calomel, when used with water, as he recommended, is, he thought, perfect; the skin is acted upon, and the lungs are not irritated. The caution given to use water with the bath has been neglected in some quarters. During the fumigation of calomel, hydrochloric acid is given off, which is very irritating to the lungs, but no bad results follow it if water is used as well. In the fumigation of calomel dry, without the presence of water, as in fumigation from a teapot, hydrochloric acid gets into the lungs, and causes much harm.

Case I.—A young woman in good health, and well nourished, was suffering from a syphilitic ulcer of the throat. Twenty grains of calomel were volatilized in a teapot, and inhaled; the skin became cold and livid, the lips blue and the pulse small. On a *post-mortem*, for the woman died, the internal organs were healthy, but the lungs were emphysematous, and there was effusion into them. The symptoms appeared suddenly, and the fumigation, no doubt, caused the death; if a little vapor of water had been present, no harm would have happened.

Case II.—A man inhaled gr. xxx. of calomel from a teapot for four nights, for the cure of a hoarseness which had lasted two years, and which had resisted a great variety of treatment. The hoarseness was cured without salivation, and the man has suffered ever since from a cough, and pain in the chest. The lungs are not diseased, and no tubercle is present. In America the bath is used a great deal, but they make a sweating bath of it, which is an error, as the patient is debilitated, and the calomel washed off.

The President asked Mr. Lee if he had met with any untoward results, after his treatment with the bath. What recommendation did he give to those about to use the bath?

Mr. Lee had not seen bad results, except from the pre-existing disease—old cases of mercurialization, or disease of the bones. He does not salivate, but gets a slight tenderness of the gums. He uses an apparatus of tin, with a tray for the calomel, and a gutter for

water, a spirit lamp to burn an ounce of spirit, calomel ʒ ss. A stool, a chair, and a cloak. The calomel is sublimed and deposited on the skin. A little of the vapor is to be inhaled from time to time; the patient is to sleep in the cloak. In four or five nights the gums are affected. In the case of one patient, two successive baths produced tender gums. Substances likely to induce diarrhœa are to be avoided. —*The Doctor*, March 1, 1872.

OXYTOXIC POWERS OF QUININE.

It having been recently claimed for quinine that it has power to cause uterine contractions, Dr. R. W. Erwin details in *The St. Louis Medical and Surgical Journal*, of March, 1872, what may almost be considered a test case. A woman in the fifth month of pregnancy was seized with violent irregular intermittent, in which abortion was very strongly threatened, by pains, dilatations of the os and flow. Under the pronounced use of morphia, the symptoms were kept in check until the irregular paroxysmal disturbances developed into a distinct intermittent. Quinia was then administered, until profuse cinchonization was induced. The paroxysms, by this treatment, were entirely cured, and the threatening abortion prevented, the patient going to the full term.

Dr. Jas. C. Harris very forcibly (*American Practitioner*, April, 1872) combats the asserted power of quinine of causing contractions of the gravid uterus, stating that he has given it very freely in many cases of threatened abortion from ague, and always thereby at once checked the malarial disease and the commencing abortion.

OZONE: ITS CHEMICAL, PHYSIOLOGICAL, AND CLINICAL CHARACTERS.

In a meeting of the *Gesellschaft der Aerzte* of Vienna, on the 26th of January, Dr. Dittel being in the chair, Dr. J. Schreiber, physician of the Sanatorium of Aussee, gave a discourse upon ozone. The accidental discovery of ozone we owe to Van Marum, who, in 1785, passed the electric spark through oxygen, and then perceived that the gas acquired a peculiar odor. He, however, did not go further. Professor Schönbein, of Basle, first of all made himself master of the situation, and brought forward a number of interesting facts relative to ozone. He found that a peculiar phosphorus-like smell took place when water was resolved into its elements by the galvanic battery. He named the

substance which caused this smell ozone. The smell of ozone is only set free at the positive pole; at the negative pole there is no trace of it. The easiest method of exhibiting ozone is to place phosphorus in a flask filled with atmospheric air, and partly covered with water, the flask being shaken so that new portions of the phosphorus always come in contact with the air. Ozone is a gas which is not taken up by water. Whilst the common oxygen molecule consists of two atoms, the active ozone molecule contains three atoms. Ozone oxidizes bodies also at low temperatures; raising them at once to the highest point of oxidation. From this circumstance it is like chlorine in its bleaching and disinfecting process; it oxidizes silver, but neither gold nor platinum. It bleaches litmus paper and indigo solutions. It is absorbed by straw-humus, and organic matter in general.

After the author of the paper had mentioned the remaining chemical properties of ozone, he adverted to the theory of Schönbein concerning ozone and antozone, and the volumetric relations of ozone, and then described the way in which ozone acted with blood. Blood, defibrinated as well as undefibrinated, and hæmo-globin, have the property of setting free ozone which has been taken up by oil of turpentine. Blood globules act in the same way upon the peroxide of hydrogen. This substance is resolved by means of the blood globules into water and oxygen, and the nascent oxygen gives the well-known reaction, namely, that of making blue strips of guaiacum paper. Hæmoglobin loses this power when it is raised to boiling heat or is mingled with alcohol. According to the investigations of Alex. Schmidt, there is no doubt but that the oxygen which is taken by respiration and food into the organism of animals is ozonized by the blood corpuscles; yet, as all the ozone, immediately after being taken in, is required for purposes of oxidation, we cannot discover either free or combined ozone any longer in the blood. It seems near the truth that the ozone is destroyed when water is present, forming with it peroxide of hydrogen; but this also is separated into water and oxygen, which latter, in its nascent stage, is used for purposes of oxidation. For this reason no peroxide of hydrogen has as yet been noticed in the blood. According to this account there takes place in the organism of animals a continuous formation and destruction of ozone and peroxide of hydrogen. A constant work of oxidation goes on in all vascular parts of the animal economy, keeping up the chemistry of life. With the assistance of ozone the blood corpuscles are dissolved and changed into other products.

The peroxide of hydrogen contained in the blood is thus quickly decomposed into water and oxygen; but the latter is not taken up as such by the blood, since we know that even a few bubbles of oxygen,

when taken up by the blood, have an injurious effect. The nascent oxygen is employed at once for fresh purposes of oxidation. Schmidt explains the fluidity of the blood by observing that the products of the destruction of the hæmo-globin immediately lose their plastic property through the action of the oxygen, which is in a nascent state. When the blood is removed from the body its chemical nature undergoes alteration, and the fibrino-plastic property appears. In this way, too, the fluidity of the other fluids in the body, such as lymph, chyle, etc., may be comprehended.

The remark of Schönbein, that the chief function of the blood corpuscles is the chemical excitement of the oxygen of the respired air, has found, by recent experiments, complete confirmation. With respect to the measurement of atmospheric ozone, it may be remarked that ozone is an almost constant constituent of the air. The great natural fountain-head of this substance must be sought for in the electric discharges of the clouds; but there are several processes by which ozone may be obtained.

Recently, Thau, of Pesth, has discovered a new source of ozone. He, by accident, became aware that ozone is found in the hydrogen flame of the Bunsen light, and in the flame of spirits of wine. Thau is accordingly of opinion that this substance is produced in various processes of burning. When coal burns, however, no ozone is produced, because in this case a molecule C absorbs the whole molecule S. Besides this, according to Montegazza, several aromatic plants and flowers possess the property of making evident ozone, which he has found from a number of experiments. With respect to the ozonometer, the author of the paper observes that especially iodide of potassium, which ozone destroys, is the substance whose reaction is made use of. Two hundred parts of water, with ten parts of starch and one part of iodide of potassium, are used; and into this strips of paper are dipped. Such strips are turned blue in air containing ozone, because the iodide is destroyed, iodine being set free. This method, however, of observing the presence of ozone leaves much to be desired. From the accurate observations of Professor Boehm, it results that the atmosphere contains more ozone by night than it does by day, and more when western winds blow than when eastern winds prevail. There is more of it on the side of the house where the wind blows than on the other; more in country than in town. With respect, too, to the season, there are many differences. There is more ozone in the air from February to June; less in the months from July to January.

As to the therapeutical value of ozone, as yet there is little to be found in medical literature clear or well-marked. Dr. Lender relates a case wherein a woman who, after obstinate intermittent fever, had

symptoms resembling cholera and was in grave danger, was saved by inhalation of ozonized air. Again, in cases of asphyxia from carbonic oxide gas or common gas, the good effect of ozone has been more than once proved.

The reader of the paper closed his interesting communication by the following conclusions:—1. Ozone is nothing else but oxygen condensed to two-thirds of its bulk, in which state it possesses energetic oxidizing properties. 2. The whole of the tissue-changes in animals may be accounted for by the transformation of the inhaled oxygen into ozone, and the effect of the latter on the tissues. 3. Ozone composes a constant part of atmospheric air. 4. The use of ozone as a therapeutic agent deserves the greatest attention from physicians, and is destined to play a great part in the practice of medicine (*a*).

The reading of the paper was illustrated by demonstrations and physical experiments.—*The Doctor, March* 1, 1872.

THE TREATMENT OF FEVER.

BY DR. C. MURCHISON.

1. To remove, when possible, the cause on which the fever depends.

2. To promote elimination, not merely of any morbid poison, but of the products of exaggerated metamorphosis in the blood and tissues.

3. To reduce the temperature and the frequency of the action of the heart.

4. To maintain the nutrition of the tissues, and stimulate the action of the heart, by appropriate food and stimulants, taking care, at the same time, not to excite congestion, or increase the work of the already overtasked glandular organs.

5. To relieve dangerous and distressing symptoms.

6. To obviate and counteract secondary complications.

1. Unfortunately, it is not often that we have it in our power to remove the cause of pyrexia; but the object is one always to be kept in view, and sometimes the main efforts of our treatment must be directed to secure it; as, for example, pyrexia dependent upon pent-up pus, an obstructed bowel, or gouty, syphilitic, or periosteal inflammation.

2. The elimination of any morbid poison, as well as of the products of exaggerated metamorphosis, will often be promoted by the judicious employment of diaphoretics, diuretics, purgatives, and emetics. The old practice of commencing the treatment of pyrexia by giving a purgative, to unload the portal circulation and promote the action of the liver, is undoubtedly a good one, and is particularly advisable in persons of robust habit, or who live too well. In mild cases of pyrexia, the

only treatment necessary consists in the avoidance of any chill, and in the administration of a mild aperient, followed by frequent doses of diuretics and diaphoretics, such as the citrate of potash, or the liquor ammoniæ acetatis with spirit of nitrous ether. Elimination will also be promoted by a plentiful supply of fresh air, which will favor the escape of carbonic acid from the lungs, and by the free use of diluents, which will help to wash away through the kidneys the products of tissue-waste. In all grave cases of fever you will remember the importance of maintaining the action of the kidneys, and of keeping a good watch on the state of the urine; noting carefully not so much its color and the presence or absence of lithates (both of which characters will depend much on the quantity), but the quantity and the presence or absence of albumen. When the quantity becomes notably diminished, or albumen appears, advantage will often be derived from hot poultices to the loins, aperients, diaphoretics, diluents, and diuretics. But while you promote elimination, you must take care that the means for this end do not weaken too much the action of the heart; and you must remember that, in some fevers, the natural processes of elimination are excessive, and conduce to dangerous exhaustion and death.

3. For reducing the intensity of the pyrexia, different measures have been proposed.

Blood-letting was at one time universally resorted to for this object, but in this country it is now entirely discarded, because it was found to increase one of the great dangers in pyrexia, viz., failure of the heart's action. There are few accurate observations on the effects of blood-letting on the temperature of pyrexia; but we know that, when a copious bleeding of the nose or the bowel takes place in enteric fever, although the temperature may fall below the normal standard, it speedily regains its former height, or rises above it.

The external use of cold water is one of the most certain means of reducing temperature in pyrexia, and in certain cases is attended with good results. The attention which this practice is now attracting will justify the following remarks: In the seventeenth century the brothers Hahn, of Leipzig, treated fevers by the external use of cold water, but their observations were soon forgotten. Toward the end of last century (1787) cold affusion was proposed by Dr. Currie, of Liverpool, both for arresting and mitigating fever. The patient was seated naked in an empty tub or bath, and several buckets of water, of a temperature of 50 or 60 deg. Fahrenheit, were poured from a height of from 2 to 3 feet or more over the head and chest. He was then hastily dried and restored to bed, and, in most cases, the operation was repeated once or twice daily. It was stated that in many cases, if resorted to during the first three days, this treatment arrested the disease; while in

others it reduced the pulse and temperature, relieved many of the distressing symptoms, and particularly the headache, restlessness, and delirium, and conducted the disease to a safe and speedy issue. The affusions were employed at any stage of the fever; but the effects were always most salutary at an early stage. They were said to be contraindicated when the temperature of the skin, ascertained by the thermometer, was not much above the normal standard, or when, notwithstanding an elevation of temperature, the patient complained of chilliness, or suffered from severe diarrhœa or profuse sweating.

The wonderful results obtained by Currie were confirmed by numerous observers in different parts of the world, whose testimony is recorded in the edition of his work published in 1804.* But in the British epidemic fever of 1817–19, the practice was followed by many with great perseverance, and the general result, according to Sir Robert Christison, was that in very few cases, if any, was the disease arrested by it; that although an abatement of febrile heat and restlessness occurred almost invariably, it was of short duration, and not to be made permanent by any frequency of repetition; that as much good eventually was attained by frequent cold or tepid sponging, together with cold applied to the head; and that often the cold affusion occasioned for a time after each application an intense feeling of pressure and weighty feeling in the brain, which could not be regarded without some uneasiness.† These statements, backed by professional and popular prejudice, account perhaps for the subsequent neglect of cold-water treatment of fevers. But the observations made of late years by Brand, of Stettin, Jurgensen, of Leipzig, Liebermeister, of Basle, Ziemssen, of Erlangen, and H. Weber and Wilson, of London, show that although the practice may not shorten the fever, and is often inapplicable, yet under certain circumstances it is useful not only for reducing the temperature, first of the surface and then of the interior of the body, but for relieving headache and other distressing symptoms, removing congestion of the kidneys, warding off delirium and coma, and rousing the nervous system in cases of excessive stupor. The circumstance has perhaps been too much lost sight of, that cooling the body may not influence the conditions on which the development of heat depends; but with reduced heat it may be assumed that there will be diminished metamorphosis, to the non-elimination of the products of which many of the dangers of fever are due. In point of fact, Schroe-

* *Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever.* By James Currie, M.D., F.R.S., 1804.

† Article "Continued Fever" (*Library of Medicine*, vol. 1, 1840).

der, of Dorpat, has ascertained that cold baths effect a marked diminution in the excretion of carbonic acid and urea in fever; * and as this was not attended by any aggravation of the general symptoms, it is fair to attribute it to a retarded metamorphosis of tissue.

Statistics have been appealed to to prove the great success of the cold water treatment of fevers (particularly of enteric fever) as contrasted with that of an expectant method; and, although other conditions not stated may have helped to influence the result, they suffice to show that the practice is not beset with the dangers commonly imagined. But the most conclusive facts in favor of the practice are those observed in certain cases of hyperpyrexia by Dr. Wilson Fox † and others, where its employment was followed by recovery from an elevation of a temperature (110 deg. Fahr.) which, under every other method of treatment, has been speedily followed by death. At the same time there are many cases of pyrexia in which the cold affusion or immersion would be unsuitable or injurious. It is likely to be of the most service when the temperature is under 102 deg. Fahr., or when the extremities are cold, although the temperature of the central parts of the body be high; and it must always be employed with caution when there are the signs of weakened cardiac action or of stagnation of blood in the capillary circulation, although it may be noted that in one of Dr. Fox's patients, who was apparently rescued from death, the face was cyanotic, and the radial pulse imperceptible.

There are different plans for employing cold water in the treatment of pyrexia, such as the cold affusion practised by Currie, packing in a cold wet sheet resorted to by Brand, or immersion in cold baths. The last is the method now most in fashion. The patient is placed in a bath having from 50 deg. to 70 deg. Fahr., or better, as Ziemssen recommends, in one whose temperature is about 10 deg. below that of the body, but which, after the patient's immersion, is gradually cooled down to 68 deg. by adding cold water. He should remain in the bath for half an hour, or until shivering comes on, and all the time he is in the bath his limbs ought to be rubbed by assistants. He is then to be hastily dried and put into a warm bed. For some time after the bath, the temperature in the rectum continues to fall as the trunk parts with its heat to the extremities; but as soon as the temperature in the rectum rises again to 104 deg., the patient ought to have another bath. In the early stages of the fever, as many as seven or eight baths in the day may be necessary. When cold affusion or

* Ueber die Einwirkung kalter Bäder auf die Gas- und Harnstoff-Ausscheidung beim Typhus.—*Deutsch. Archiv klin. Med.*, 1869, Bd. vi., S. 385.

† *On the Treatment of Hyperpyrexia by Means of the External Application of Cold.* London, 1871.

immersion is contraindicated or inexpedient, frequent sponging of the surface with cold or tepid water will also help to cool the body, and is often a source of much comfort to the patient.

Quinine in large doses has an undoubted influence in lowering the temperature of pyrexia. In most cases of severe pyrexia, ten, fifteen, or twenty grains will, within an hour or two, cause a fall of the temperature to the extent of three or four degrees, and to a less degree of the pulse.* It is true that the effect passes off after a few hours, and that there is no good evidence (except in malarious fevers) of its cutting short the natural course of the attack; but the effect may be maintained by a repetition of the dose; and the remedy has often appeared to me to be of signal service when a pyrexia was at its crisis, and when the temperature was rising in place of falling.

Digitalis, Aconite, and Veratrum Viride have a marked power in reducing the pulse, and, to a less extent, the temperature in pyrexia, and are, in my opinion, too much neglected for these objects in practice. Veratrum viride is largely used in America in the treatment of fevers, and its effect upon the pulse is speedy and most decided; the only objection to its use in private practice which my experience suggests is its liability to induce sudden nausea and faintness, but these symptoms are transient, and cease on the administration of a stimulant. Ten or fifteen minims of the tincture may be given every four or six hours. Aconite is a remedy of great value for reducing the pulse and temperature in fever, and especially in the pyrexia resulting from local inflammations, and is much less used than it deserves to be. Digitalis is another remedy which I have often found very serviceable in various forms of pyrexia. While increasing the force of the cardiac contractions, it diminishes the frequency of the pulse, reduces the temperature, and increases the flow of urine. Lastly, *antimony* reduces, in a marked degree, the frequency of the pulse in pyrexia, and promotes diaphoresis and mucous secretion. It was at one time largely used in all fevers, but in many it is contraindicated by its tendency to weaken the contracting power of the heart.

4. The nutrition of the body must be maintained by appropriate food, in the form of milk, beef-tea, eggs, and farinaceous articles. Not long ago it was a custom to starve fevers; and you may probably have heard that the late Dr. Graves, of Dublin, who was mainly instrumental in doing away with this objectionable custom, expressed a wish that his epitaph might be "He fed fevers." The modern tendency, however, is perhaps to over-feed fevers, and especially to give

* For evidence on this point, see Report of a Committee (of which I was a member) of the Clinical Society.—*Trans. Clin. Soc.*, 1870, vol. iii.

too much nitrogenous food. Dr. Parkes has shown that there are theoretical objections to a purely nitrogenous diet in fevers. It is doubtful if the disintegrating nitrogenous tissues can be fed; and in that case the albuminous food must be got rid of by the already overtasked glandular organs. Milk is in most cases preferable to beef-tea as an article of diet in fevers.

In many cases of fever it will be necessary to give stimulants. You must not give stimulants simply because the patient has fever. Many patients with fever do better without them. But you must not refrain from giving stimulants when the heart shows signs of weakness, as happens in the advanced stages of most protracted fevers. The heart may be artificially stimulated by sinapisms and other irritating applications to the skin, but better by the internal administration of ammonia, ethers, and alcohol, in quantities proportioned to the weakness of the heart and pulse.

5. In every case of pyrexia, you must combat dangerous symptoms as they arise. Stagnation of blood in the pulmonary capillaries, impeding the aëration of the blood, is to be met by stimulants, such as alcohol, carbonate of ammonia, and ethers. Digitalis, by strengthening the heart's action, and turpentine, which seems to stimulate the capillary circulation, are also useful under these circumstances; while advantage will likewise be derived from mustard and linseed poultices to the chest, and from warm applications to the feet. When uræmic symptoms predominate, the action of the skin and bowels is to be promoted, digitalis and saline diuretics may be given to increase the flow of urine, sinapisms and linseed poultices are to be applied over the loins; while attempts may be made to rouse the patient by cold affusion to the head, by blistering the shaven scalp with liquor ammonia, and by sinapisms to the nape and feet. In many cases of fever you will also be called upon to relieve distressing symptoms—such as diarrhœa, pain, sleeplessness, and delirium—which, if unchecked, hasten exhaustion and prevent recovery.

6. You must counteract, as far as possible, secondary complications, which will vary according to the primary cause of the pyrexia, and which always add to the patient's danger.

Lastly, I would caution you against two errors in the treatment of pyrexia:

1. You must take care that the remedial measures which you adopt in no way thwart the natural modes of recovery, or favor the natural modes of death.

2. At the same time, you must not be content with adopting a treatment of pure expectancy. You must not forget that the natural termination of pyrexia may be death, as well as recovery.

Hyperpyrexia Treated by Cold Baths.—In the *Practitioner* of March 1, 1872, Dr. Jno. Haddon details two cases strikingly illustrative of the value of cold baths in hyperpyrexia.

ELIMINATIVE TREATMENT OF CHOLERA.

Dr. Kaczorowski, in an article on an epidemic of cholera, which prevailed in Posen in 1866, published in the *Berliner Klin. Wochenschr.* for January 8th, speaks favorably of the eliminative treatment of cholera. The result, in a number of cases which he had observed in hospital and private practice, led him to believe that the cholera-poison is excreted through the bowels, and sometimes through the lungs; that its passage into the blood thickens this fluid and paralyzes the heart; and that this occurs the more rapidly the earlier the intestinal evacuation is arrested. He asks whether the fact that the suppression of the intestinal evacuation is a bad sign, is not a guide to the treatment. In 1852 he had observed the good effects following the use of evacuants, especially ipecacuanha as an emetic and calomel as a purgative; and he made the same observation in 1853, 1855, and 1856, but found that in some cases the use of mercury was followed by tedious stomatitis. In 1866 he gave castor oil and wine, with quinine during the stage of reaction. The following was the mode of treatment which he followed. When the patient was seen in the early stage he was in bed and covered with a blanket; a cold compress was applied over the head and abdomen; iced water was given him for drink; and a tablespoonful of castor oil, with a little camphor or peppermint, was administered. If the oil were vomited (which frequently occurred), the dose was repeated, and the patient was kept in the horizontal position, no drink being given for twenty or thirty minutes. In the course of an hour or two there were usually several stools mixed with flocculent matter (intestinal epithelium). This was followed by cessation of the anxiety and restlessness, and of the vomiting and abdominal symptoms; the extremities began to recover warmth, and the pulse became slower and fuller. The muscular cramps were obviated as far as possible by rest, and, when they occurred, were relieved by extension made by the attendants. In most of the acute cases this treatment, Dr. Kaczorowski says, was sufficient to arrest the disease. If the symptoms returned after some hours (which not unfrequently happened), the dose of castor oil was repeated, with the results already described.—*Medical and Surgical Reporter.*

DELIRIUM TREMENS.

In a paper by Dr. John Burke, in the *Medical and Surgical Reporter* of April 13, the following conclusions are arrived at:—

1st. That delirium tremens is a blood-poisoning produced by alcohol.

2d. That the disease is self-limiting like any other blood-poisoning, that is, the system will throw it off, provided it is not overwhelmed by the strength of the poison.

3d. That most cases will commence to get well within ten days, though I have seen cases where the disease was prolonged to three weeks, whether by the doctor's treatment or the force of the disease, I cannot state positively.

4th. That the rational treatment is to cease all alcoholic stimulants, and to give in place of them such nutriment as the stomach can easily digest, as animal broths, and in well-regulated quantities.

Careful watching is absolutely essential. The patient should never be alone, whether sleeping or waking.

5th. Though we have no antidote to the poison, yet we can, by restoring the secretions, ward off bad symptoms, and help to eliminate the poison from the system by a proper course of remedial means, already enumerated. When subsultus tendinum and profuse sweating are the chief features of the disease, quinine and iron are the proper remedies. To allay nervous excitement and cause rest, the choice lies, I think, between bromide potass., chloroform, and chloral hydrate. In some cases these drugs have a well-marked effect, but in other cases you will be disappointed by them. In some strong, vigorous men, the walking, so as to completely tire out the patient, will produce sleep; but he must be kept walking until he really is tired—from five to ten miles, if need be; he must be pushed forward until he cries for mercy, to allow him to lie down and sleep.

6th. Opium in small quantity has no effect on the disease. In large doses it is dangerous, if not fatal. Even in large doses it may not cause sleep. We know that the vast majority of delirium tremens patients will get well. We should not, therefore, jeopardize the lives of people, even if we were certain that we could shorten the disease.

7th. You should never pronounce too favorably on delirium tremens. Let your prognosis be guarded, for in a day some complication may arise that will alter the whole case.

MAMME APPLE.*

Dr. Juan Calisto Oxamendi called the attention of the Academy to the water of the seed of the mamme apple (Lucumæ Mammosæ).

* Translated by my pupil, John Guitéras.

After having stated the advantages which it presented to Cuba as a tropical product, over all the other vegetable cyanogenous preparations which suffer so much in the importation, Dr. Oxamendi passed on to announce how little had been said about the medical properties of the fruit. He quotes from Descourtilz:—"The fruit before its maturity possesses astringent properties which make it useful in cases of intestinal atony, and for the control of rebellious chronic diarrhœas, taking care not to interfere with these evacuations when they are critical, or in any way salutary. The ripe fruits constipate like the medlar, and enter into the composition of the gargles used in catarrhal anginas." Griffith in his *Medical Botany* (Philadelphia, 1847) only copies from Descourtilz.

If the composition of this seed became well known, there would be no difficulty in administering it, either in an emulsion with some other emulsive seed, or in the shape of a water, which Dr. Oxamendi asked Mr. Français Figuerra to prepare for him in the same proportions used in the French Pharmacopœia. Mr. Figuerra also made an analysis of the seed, separating the prussic acid in the shape of cyanide of silver; he found that thirty grms. or one ounce of the water contains about 0.019 of the anhydrous acid, or 0.19 of the medicinal. Dr. Oxamendi compares this proportion to the proportion of acid contained in the water of the cherry laurel, as prepared by the *Codex Medicamentarius Gallicus*, and finds that in 100 parts the former exceeds the latter by 0.13. He proposes for future investigators to determine whether the activity of the seed is due to the two principles amygdaline and emulsine.

As to its therapeutic applications, Dr. Oxamendi says they are the same as those of the acid, and in their study he follows Nothnagel's new treatise on pharmacology, and quotes him as saying that prussic acid has been abused, so experience has shown, and that its use ought to be limited to cases of hyperæsthesia, which manifests itself by reflex action, as in cardialgia and vomiting. But not in gastralgia due to organic lesion, as chronic inflammation, ulcer, or neoplasms, in which cases Budd has seen the pain increased by its use. It is also used to soothe coughs not accompanied with fever, and with little expectoration. Dr. Oxamendi puts, in a mixture of 120 grammes, from 5 to 10 of the water with 15 grammes of simple syrup, or syrup of acacia. When he cannot procure the water, he makes this emulsion:—

℞.—Seminis pistaciarum mani 30 grammes, seminis lucumæ 8 gram. ft. cum aq. destill. 200 gram. emulsio, cui adde syrupi sacchari 30 gram. ft. haustus. Sig., a tablespoonful every hour. By adding to this mixture 15 of nitrate of potash, he uses the latter when an irritated condition of the alimentary canal would contraindicate its administration.

Dr. Oxamendi says: "Adopting the same proportions of the sweet and bitter almonds which enter into the composition of the emulsive syrup of the Codex, and substituting the former by the peanut (pistaceæ pharmaceutically and trachis hypogea botanically), I have had a syrup made which I call 'Syrupus pistaciarum et seminis lucumæ mammosæ,' which I use to sweeten my expectorant mixture for children. I recommend the following in acute epidemic catarrh, or in dentition:—

"℞.—Olei sessami orientalis 4 parts, mucilagis gum-arabic, q. s. ad sub-acetatronem, adde aq. destillat., syrup emuls., pistaciarum et sem. lucum. mammos. āā 30 parts extracti folior. Daturæ arboræ 0.1. M. ft. tinctus. The dose is a teaspoonful every two hours."—*Anales de la Real Academia de Ciencias Medicas, Fisicas y Naturales de la Habana*, November 15th, 1871

RHEUMATIC HYPEREXIA TREATED BY COLD AFFUSIONS.

Dr. Herman Weber read the history of a case before the London Clinical Society (*Medical Times*, March 23d), in which on the thirteenth day of a severe inflammation the temperature suddenly rose to 108.2° F., the pulse to 148, and the respirations to 56, and simultaneously great restlessness, vomiting, delirium, tendency to coma, excessive micturition, and involuntary discharges made their appearance. The patient was kept for thirty minutes in a bath at 71° F., and affusion of the same temperature simultaneously practised. When he was removed from the bath, the mouth temperature had fallen to 101.8° F., and in ten minutes went down to 98.8°. The patient then went to sleep quietly, perspiring greatly. In the afternoon of the same day the temperature rose again, and the bath and affusion were again resorted to with the result of reducing the temperature to 101° and a subsequent fall during the next hour of three more degrees. After the second bath the affection took the form of a mild rheumatic fever.

ELIMINATION OF ALCOHOL.

A. Dupree, Ph. D., has read a paper on this subject before the Royal Society of London, of which an abstract is contained in the *Chemical News* of February 9th, 1872. The results obtained (says the *Chemical News*) may be summed up as follows:—

The amount of alcohol eliminated per day does not increase with the continuance of the alcohol diet; therefore all the alcohol consumed daily must of necessity be disposed of daily; and, as it certainly is not eliminated within that time, it must be destroyed in the system.

The elimination of alcohol following the ingestion of a dose or doses ceases in from nine to twenty-four hours after the last dose.

The amounts of alcohol eliminated, both in breath and urine, is a minute fraction only of the amount of alcohol taken.

A very important discovery made by Dr. Dupree was, that, after six weeks' abstinence, and even in the case of a teetotaller, a substance is eliminated in the urine and perhaps also in the breath, which, though apparently not alcohol, gives all the reactions ordinarily used for the detection of traces of alcohol, viz.: it passes over with the first portions of the distillate, it yields acetic acid on oxidation, gives the usual green reaction with bichromate of potash and strong sulphuric acid, yields iodoform, and its aqueous solution has a lower specific gravity and a higher vapor tension than that of water. It was found that after the elimination of injected alcohol had ceased the amount of this substance eliminated in a given time was below the quantity normally excreted, and only gradually rose again to the normal standard.

EMPYEMA.

In the Canada *Lancet* for February is reported a successful case of Empyema treated by Dr. I. H. Richardson. The method of draining and washing the pleural cavity seems to have been at once novel and effective. It was as follows:—

The chest was punctured by a trocar and canula of one-quarter of an inch in diameter. During the flow of the fluid, an india-rubber tube, about two feet long, just large enough to loosely fill the canula, well oiled and full of water, was passed through the canula into the chest, and the canula was then withdrawn over the tube. The free end was then placed in a basin of water, and about two pints of thick, yellowish white, inoffensive pus were discharged. When it ceased to flow, the end of the tube was securely tied while it was in the water; plasters were then applied to keep the tube in its place, and the whole secured by a broad flannel bandage.

After this the fluid was daily evacuated from the chest by opening and afterwards tying the end of the tube under water. Evidences of blood-poisoning manifesting themselves, after a time the following method of washing out the cavity was adopted:—

After the fluid had been drawn off as usual, the end of the tube was

pinched and transferred to a tumbler of clear water, of blood heat. Upon elevating the tumbler, the water ran into the chest; upon depressing the tumbler the water ran out, mixed with decomposed pus and horribly offensive, shreddy fibrin. The water was changed and the process repeated until the water came out nearly as clear as it went in. A great deal of difficulty was experienced in completely cleansing the cavity, as the tube was often blocked up by the shreds of decayed fibrin; but when this occurred the current was reversed for a time, and by perseverance the cavity was completely cleansed. After this no difficulty was experienced in keeping the cavity clear. Injections were practised by putting glycerine and carbolic acid in the water. After the tube had remained for fourteen months, it became advisable to substitute another for it, which was graduated in inches by nitrate of silver, so that it could be told how much of it was within the chest. The new tube was filled with water and well oiled, and then after running as much water into the chest as would pass in, the old tube was quickly withdrawn and the new one inserted in its place.

The patient, after several years, was enjoying a fair measure of health, there being some discharge through the tube, which he still wore.

STUDIES ON TOBACCO.

In the *Giornale Ven. d. Sc. Med.*, Dec., 1871, Prof. P. Montegazza gives an excellent memoir on tobacco. He first speaks of the researches of Erlenmayer, who gives the following symptomatology of poisoning by nicotine. Conjunctivitis, diplopia, and amaurosis are not infrequent when tobacco is greatly made use of. The skin takes a yellowish hue, and furuncular eruptions are not rare. Stomatitis, glossitis, and black deposits on the tongue and teeth are noticed. Gastrodynia, mesenteric neuralgia, dyspepsia and feeble appetite are common, serous diarrhœa, and, in severe cases, paralysis of the rectum. Pharyngeal catarrh, bronchitis, hæmoptysis, asthma, and catarrh are caused by smoking. The circulatory system presents palpitation of a special nature, with a certain anxiety. All authors agree that the genito-urinary organs are least affected by tobacco. The nervous system, in general, suffers a good deal from the chronic use of tobacco. Hyperæsthesia and neuralgia are common, and we have already seen that the optic and olfactory nerves are affected, whilst the nerves of general sensation are affected by various hallucinations. There may occur neuralgia of the various branches of the fifth pair, or of the ischiatic, or along the vertebral column. Anæsthesia is greatly pronounced over the whole skin, and especially on the legs. Analgesia also is complete.

There is muscular weakness, greater or less, especially in the lower extremities, and sometimes so grave that the patient cannot stand on his feet, and when seated must lean against a solid body. The horizontal position is the least grave. There also may be tremors in the limbs, uncertain gait, convulsive movements. Vertigo is an important symptom, which is conjoined with a sensation as if the eyes were continually rolling. The intellectual and moral functions are perturbed with a well-marked nervous irritability, with anxiety, with the terror provoked by frightful visions, with dulness of thought, melancholy, and timidity. In some cases there occurs true delirium accompanied by trembling, as in chronic alcoholism; in other cases there is profound melancholy, alternating with great exaltation, and with precordial anguish, and lastly, it may give rise to mania. Some observers have also noticed dementia.

Dr. D. Petrera made experiments on frogs with tobacco, and found the acceleration of the respiration first taking place, to be followed very quickly by stoppage of respiration, stupor, palsy of the upper extremities, and congestion of all the viscera. Sichel speaks of amaurosis of tobacco-smokers. Brodie accuses tobacco of injuring the race. Tiedemann speaks of the evils done to boys by smoking. Boys who smoke become weak, irritable, pallid, and thin. Cacopardo, of Rome, and Professor Scalzi, have spoken much against tobacco. They accuse nicotine of causing phthisis. Decaisne also says it lowers the intelligence of young men. King James in his work, "rem turpem visu, olfactu insuavem, cerebro noxiam, pulmonibus damnosam," and adds that by means of tobacco "Corporis sanitas atteritur, res familiaris arroditur, dignitas gentis senescit domo, vilescit foris." (*Misocapnus*, 1644.) Men have discovered in smoking a new pleasure, but also a new sorrow. And the race would have been far happier if it had never known tobacco. The evils of tobacco are—that it diminishes the general sensibility, and lowers public morality, makes the air in rooms unwholesome, takes men away from woman's society, sometimes produces severe poisoning, diminishes the working power of a people, and adds a heavy expense to the poor, and it shortens life, easily prompts to drinking, may cause amaurosis; it retards the growth of the young, causes nervous disease of all kinds, palpitation of the heart, asthma, weakens the will and the thought, and genital organs; weakens the digestive organs, and the whole organism and its muscles.

On the other hand, it gives pleasure, is a mild purge, creates a new industry, sometimes assists thought, and is a kind of poetry to the poor, renders hungry persons less miserable, and calms for a time physical and moral suffering.—*The Doctor*, March 1, 1872.

Caruba di Guiden.—Under this name are largely used, for the relief of asthma, certain gall-like bodies, formed on the various species of pistacia (especially P. terebinthus), as the result of the stings of an hemipterous insect. According to Ignaz Hoffmann, they are used by smoking and fumigation. For this purpose they are coarsely pulverized and burnt in the bowl of a pipe, or in a dish, with some arrangement by which the fumes may be inhaled.

Preparations should be made beforehand, so that the smoke may be inhaled at the commencement of the attack.

They appear to act by exciting free secretion, probably through the turpentine with which they are saturated. They are also said to be very useful in other lung affections besides asthma, even in chronic organic diseases.—*Schmidt's Jahrbücher*, Jan., 1872.

The Bath in Small-Pox.—Dr. Stokes, Regius Professor of Physic in the University of Dublin, recommends, in the *Dublin Journal of Medical Sciences* for January, 1872, the use of the warm bath in the treatment of small-pox. He says: "We cannot doubt that the mortality in small-pox hospitals would be greatly diminished by the use of the bath." After describing a very severe case of confluent small-pox, in which the patient is kept alive only by stimulants, he said the trial of the warm bath was suggested to him by Mr. Smyly. "The effect was instantaneous and marvellous. The delirium ceased as if by magic. It was the delirium of pain; and the patient exclaimed: 'Thank God! thank God! I am in heaven! I am in heaven! Why didn't you do this before?' The fetor immediately and completely disappeared, so that, on entering the ward, no one could suppose that there was a case of small-pox in it. He was kept at least seven hours in the bath." This case, and its singular result, in addition to the experience of Hebra, justify the recommendation of the use of the bath.—*Philad. Med. Times.*

Epithelioma, treated by Carbolic Acid and Cured.—In the *Revue de Thérapeutique Medico-Chirurg.*, of March 1st, is reported a case of epithelioma of the lip, by Dr. Forné, in which a cure was effected by the local application of crystallized carbolic acid to the sore.

Dr. Boish (*Allgem. m. Centbl.*, 1870, 90 St.) recommends the use of pure carbolic acid in condylomata, which are attacked by the acid in all the thickness of their tissues, and then assume a dullish white color; the neoplasm falls entirely after a single or a few applications of the remedy, without leaving behind any ulcer. This method of treatment, says the author, is preferable to any other. The acid may be used in

a liquid form with a brush; it has no tendency to extend beyond the diseased parts. When carefully applied, it never causes any notable inflammation of the neighboring parts, nor any pain worth mentioning. It appears that this treatment is radical, for up to this time he has not noticed any relapse.—*The Doctor*, March 1.

Treatment of Phagedenic Chancre.—Mr. Pollock, of St. George's Hospital, London, invariably treats this disease by from 15 to 20 drops of laudanum every 4 hours, combined in some cases with half a drachm of compound spirit of ammonia.—*London Lancet*, Dec. 16, 1871.

Tetanus.—In the *Pacific Medical and Surgical Journal*, March 1, 1872, Dr. Clinton Cushing reports a case of tetanus, in which he thinks the successful issue was largely due to the use of morphia and chloral in combination.

Effects of Bromide of Potassium.—Dr. Julius Levy, of Berlin, writes that if bromide of potassium, in drachm doses, three times daily, is continued for months, a series of boils will be apt to be produced. He says if some preparation of cinchona be given with the bromide, no boils or other evil sequelæ will arise.—*N. Y. Medical Record.*

Nicotine in Tetanus.—Dr. E. M. Wath relates, in the *Australian Medical Journal* for September, 1871, a case of acute tetanus, marked by "terrible opisthotonos," in which he injected into the areolar tissue of the thigh half a drachm of a solution, one drop of pure nicotine in an ounce of water. The pulse immediately sank to sixty; all the muscles relaxed, except those of the neck; and presently the patient began to perspire. He fell into a sound sleep for four hours, after which he had fully recovered speech. On awaking, he said that he felt "all benumbed." He then took some wine and water, and an egg beaten up in milk. The injection was used at twelve o'clock at night. The patient awoke about four o'clock next morning. One hour later a pill of one grain of extract of nicotine of the Hessian Pharmacopœia was administered to him. He again awoke drowsy at nine A.M. Although his body felt very sore, the tetanic symptoms had ceased, and from this time his bowels and bladder acted regularly. A pill of the same extract was given for three nights following, after which the patient felt and continued well.—*Medical and Surgical Reporter.*

Effect of Bleeding on Gases of Blood.—In *Brown-Séquard's Archives de Physiologie*, February, 1872, MM. Mathieu and Urbain, in

a paper on the gases of the blood, show that bleeding has a very marked influence in lessening the amount both of carbonic acid and oxygen in the blood; *pain* also has a similar influence. The inference seems to be that both of these agents check oxidation.

Transfusion.—Dr. W. S. Playfair reports (*London Lancet*, Jan. 27) a case of transfusion in post-partum hemorrhage, unsuccessful from return of hemorrhage.

Bleeding in Pneumonia.—According to the *London Lancet*, Dr. Simorre has an essay on this subject in the *Tribune Méd.*, of Paris, Jan. 14, 1872. In it he relates a series of cases, occurring in country practice, in which the patients were bled copiously at the outset, again in four hours, lesser quantities of blood being taken at longer intervals two or three times afterwards. No other treatment but demulcent drinks were used, and the patient recovered.

Chloral as a Local Application to Chancres.—Dr. Francesco Accettella has been using chloral locally, with surprisingly good results, in the treatment of very old, obstinate chancres. He uses a solution of the strength of 1 to 4 for old cases; for less obstinate ones a weaker solution is employed.—*Revue de Thérapeut. Medico-chirurgicale*, April 1, 1872.

Tannate of Quinia.—In a communication to the Paris Academy of Medicine, March 12, 1872, M. Sistach states that in his experience the tannate of quinine is less powerful than the other salts, and must be used in larger doses, but that it is preferable, as never producing headache, or ringing in the ears, or the state of nervous excitement sometimes engendered in females by the use of the sulphate. Subsequently M. Briquet affirmed to the Academy, as his experience, that the tannate is but very partially absorbed, that its composition is variable, that it is untrustworthy, has no especial therapeutical powers, and is unworthy a place among medicines.—*Ibid.*

Local Anæsthesia in the Use of Caustics.—M. D. H. Spessa asserts (*L'Imparziale*) that if a hypodermic injection of morphia be given in the tissue to be acted on just before the application of the caustic, the latter will cause little or no pain.—*Journal de Pharm. et de Chimie.*

Calabar Bean in Chorea.—Dr. T. P. Russel says of calabar bean (*Northwestern Surgical and Medical Journal*): I have used it with great satisfaction in long-standing cases of *Chorea*. In one case, of more than one year's standing, a perfect cure was obtained.

Calabar Bean in Epilepsy.—Dr. S. D. Williams has been using calabar bean in epilepsy. About half of the cases (12 in all) were apparently benefited by the drug, the others not. It did not interfere perceptibly with nutrition, although the effect on the pulse and temperature was marked, the pulse being reduced from five to ten beats per minute, and the temperature from a half to two degrees. In many cases there was marked indolence and decided flaccidity of the muscular system. Increased action of the cutaneous glands was quite decided.

Local Application of Sulphate of Iron in Phlegmasia Dolens.—In the *Boston Medical and Surgical Journal* Dr. Crighton strongly advocates, in recent cases of phlegmasia dolens, the employment of a lotion of from twenty to thirty grains of sulphate of iron to each ounce of water, to be applied as hot as the patient can bear it.

Time Occupied in Absorption and Secretion.—In the *Dublin Medical Journal* for Nov., 1871, are detailed some experiments in which iodine was injected into a serous sac and was perceptible after 30 seconds, and very plainly present after a minute in the urine.

Nutritive Value of Canned Australian Meat.—In the *London Lancet* of March 2, Dr. S. W. D. Williams details experiments made by himself in the Sussex Lunatic Asylum upon some chronic insane patients, which show that the preserved Australian meat equals, weight for weight, fresh beef in its nutritive value. It does not appear to be, however, more than 3 cents a pound cheaper, as the cans very rarely contain full weight.

Bone Felon Arrested.—Dr. Jas. B. Walker details, in *The Medical Archives* for March, 1872, a case of bone felon cured in an early stage by the finger being put into a mixture of ice and salt until well congealed, then taken out, and, when the pain came back, replaced, and so on for two hours. On the first application of the cold there was intense pain for a little while.

Emetia.—Dr. Duckworth stated to the Pharmaceutical Association of London, that friends of his had used emetia largely in the treatment of dysentery in India, and had obtained from it all the good effects of ipecacuanha. The dose employed was from the sixth to a twelfth of a grain, with or without morphia, as the indications seemed to require.—*Pharmaceutical Journal*, March 9, 1872.

Ileus Cured by Electricity.—Dr. Michael Bogdain, in the *Wiener Medicinische Presse* of March 10th, 1872, details a case of ileus cured by electricity. He introduced one pole of an induction apparatus into the rectum, as far as he was able, and then placed the other over the spot where an intussusception was believed to exist, and passed at first a primary, afterwards a very strong secondary current, which produced very great distress and vomiting. Shortly afterwards a large quantity of wind and four ounces of clear odorless fluid were passed. After this there was no more severe pain or vomiting. During the succeeding night very profuse diarrhœa came on, which was finally checked by Dover's powder. Under the exclusive use of a milk diet, the patient speedily convalesced.

Treatment of Hæmoptysis by Atomized Perchloride of Iron.—F. R. C. S. recommends strongly (*The British Medical* of Feb. 24) the use of *liquor ferri perchloridi*, one to four of water, with the atomizer in hæmoptysis, citing an instance of cancer of the lungs.

[The *liquor ferri subsulphatis*, U. S. P., seems to me to afford the most rational and successful method of treating hæmoptysis. It should be first used of the strength of thirty drops to the ounce, and the strength be increased if needed. Generally the iron salt is very well borne, and does not excite coughing. A saturated solution of alum is less efficient than the iron, but may be used when the latter excites irritation.—Ed. N. R.]

Recovery from Psoas Abscess after Iodide of Potassium.—In the *Medical Archives* for Jan., 1872, Dr. C. Du Hadway reports a case of chronic psoas abscess in which the ingestion of two drachms of iodide of potassium was followed by immediate recovery of the appetite and healing of the abscess in ten days.

Carrots versus Tænia.—Dr. Jos. Ganghofer details, in the *Kansas City Medical Journal*, the case of a boy, æt. 3½ years, who was suddenly seized with a craving for carrots, both cooked and raw. Persisting in this unnatural appetite, and being allowed to gratify it for six weeks, he passed, on the 12th of October, a *tænia solium* of about eleven feet in length, body and head coming away at the same time. After this, the doctor being consulted, he found the little patient suffering from none of the symptoms of worms excepting a largely distended abdomen. The free use of carrots was recommended, and on the 24th of the same month another worm was passed; this time a *tænia lata*, 10 feet long, which came away entire, inclusive of the head. After the passing of this second specimen, the distention of the abdomen ceased,

and the morbid craving for carrots was lost. A few weeks later, however, a number of links again appeared in the evacuations. The child having no longer any desire for carrots, a little kousso was given, and a few more links passed, which ended the difficulty.

Aspirateur as a Means of Diagnosing Abscess of the Liver.—Dr. Laffan details in the *Dublin Medical Journal* of March, 1872, a case of suspected abscess of the liver, in which he, at three different times, inserted the finest needle of the aspirateur into the substance of the liver. The number of punctures was six in all; the needle was inserted its full length, and the position and direction of entrance so chosen that every part of the liver was reached. No pus was obtained. A little local, very transitory, soreness, was the only symptom produced.

Glycerine as an Antiseptic.—Concerning the use of glycerine as an antiseptic, M. Luton, in the *Gaz. Méd. de Paris*, mentions some of his experiments on the subject. He found that on dipping beef and mutton and some vegetables into glycerine, and a like quantity of each into water, the decomposition was complete in the latter instance before any signs of deterioration became apparent in the former. At one time some raw mutton-chops, pieces of beef, and a whole pigeon were steeped in glycerine, and after a lapse of forty days the preservation was still perfect. The tissues had somewhat contracted; they were partly transparent and gelatinous, but still quite compact. Experiments on the same subjects, when the glycerine was diluted with water, gave similar results.—*Food Journal.*

Dried Beef Pulp.—G. Dannecy states that beef pulp, spread upon muslin and exposed to a current of warm, dry air, soon becomes converted into a brown mass, without odor, which represents five to six times its weight of raw beef; is readily eaten in sandwiches, or even diffused through soup, and possesses all the therapeutic value of raw meat.—*L' Union Pharmaceutique*, March, 1872.

Strychnia in Vomiting.—In the vomiting of hysteria, pregnancy, ovarian tumors, suppressed menses, and uterine disease, M. Debauge, in the *Lyon Médical* for Jan., 1872, commends strychnia given by the mouth and hypodermically.

MATERIA MEDICA.

A NEW SOLVENT FOR IODIDE OF LEAD.

Dr. Donati Tomasi has discovered that the acetate of soda has the power of rendering iodide of lead soluble in water without the formation of a double salt. Thus fifty cubic centimetres of a concentrated solution of the acetate will dissolve, when cold, 15.34 grs. of the iodide; when boiling, 31 grains. A few drops of acetic acid increase the capability of the liquid to dissolve the iodide, but the addition of a large amount of the acid has no further effect. Thus fifty c. c. of the solution previously used will, with the addition of a fifth of a cubic centimetre of acetic acid, dissolve cold 92 grains, and hot 122 grains. Taking advantage of these facts, the crystallized iodide of lead is readily prepared thus:—

Take of distilled water. .....100 parts, by weight.
Acetate of soda.....160 parts.
Acetic acid.....some drops, and dissolve.

Make 8 parts of the iodide into a sort of paste with a little water. Add this, with constant stirring, little by little, to the previous solution whilst boiling, and, when it is dissolved, set aside to cool. After twelve hours add a little cold water, and from time to time larger quantities of the same, till the iodide of lead is all precipitated. Collect the crystals on a filter and wash.

Again, Dr. Tomasi's discovery may be taken advantage of in detecting the adulteration of the iodide of lead with the chromate. Thus heat, during 15 minutes, seven and a half grains of the suspected iodide in 50 c. c. of concentrated solution of acetate of soda, acidulated with a few drops of acetic acid. If the iodide be pure it entirely dissolves. If any chromate be present it will be left behind on filtration. The iodide of lead is very slightly soluble in pure glycerine, but in the following way a concentrated solution can be made for external use:—

Take of Saturated solution of acetate of soda..15 cubic centim.
Glycerine.....25 " "
Iodide of lead.....0.4 gramme.
Rose-water.....some drops.

Mix, and thoroughly rub together in a porcelain mortar. If this glycerole be too viscid, some distilled water may be added.—*Sur un Nouveau Dissolvant de l'Iodure Plombique*, Paris, 1872.

CONTRACTION OF ALCOHOL.

The following tables are taken from a paper published by E. B. Shuttleworth in the *Canadian Pharmaceutical Journal* for February, 1872:—

Table Exhibiting the Volume which 100 *Gallons of Alcohol,* 65 *Over-proof, at* 60° *F., will have when Measured at Different Temperatures.*

Temperature.		Volume of Spirit.
Centigrade.	Fahrenheit.	
15.55°	60°	100.0
12.77	55	99.7
10.00	50	99.4
7.22	45	99.2
4.44	40	98.8
1.66	35	98.6
— 1.11	30	98.3
— 3.88	25	98.0
— 6.66	20	97.6
— 9.44	15	97.3
—12.22	10	97.0
—15.00	5	96.6
—17.77	0	96.3
—20.55	— 5	96.0
—23.33	—10	95.7
—26.11	—15	95.4
—28.88	—20	95.2

Table Showing the Contraction of Alcohol in every Five Degrees, from its Boiling-Point to Zero C. (*Gay Lussac.*)

Temperature.		Volume of the Alcohol.
Centigrade.	Fahrenheit.	
74.14°	173°	1000.0
73. 4	164	994.4
68. 4	155	988.6
63. 4	146	982.5
58. 4	137	975.7
53. 4	128	970.8
48. 4	119	965.3
43. 4	110	969.7
38. 4	101	954.3
33. 4	92	949.1
28. 4	83	944.0
23. 4	74	939.0
18. 4	65	934.0
13. 4	56	929.3
8. 4	47	924.5
3. 4	38	919.9

ON THE MANUFACTURE OF ABSOLUTE ALCOHOL.

Mendeljeff states that unslaked lime offers the best material for abstracting all the water from alcohol. He states that the lime must be in greater bulk than the alcohol, which must possess at least a sp. gr. of 0.792 at 20° C. After two days all the water will be withdrawn. If, however, it is desired to distill after two or three hours, the mixture must be heated for half an hour to a temperature of 50° C. In this way, however, only the middle portions of the distillate are free from water. Erlenmeyer has modified this process, in that he boils the mixture in a retort with a return still from ½ to 1 hour, then disconnects the return-tube and distills off the alcohol. In this method all of the distillate is free from water. If the spirits of wine used contain more than 5 per cent. of water, it is necessary to repeat the process two or three times.

If very much water be present, the receiving-retort should also be filled with lime. In this way many gallons of ordinary alcohol may, in a few hours, be converted into the absolute alcohol.—*Zeitschrift des Allgem. Oester. Apothek-Vereins*, Feb. 1, 1872.

TABLE OF THE ALKALOIDAL SUBSTANCES PREPARED FROM ACONITE.

THE following table has been arranged from a paper by M. Duquesnel (elsewhere quoted, see *Toxicology*), in *L'Union Pharmaceutique* for February, 1872.

No. 1. CRYSTALLIZED ACONITIA.	No. 2. ACONITIA OF THE FR. CODEX (*Hottot*).	No. 3. ACONITIA OF COMMERCE.	No. 4. NAPELLINA (*Morson*).	No. 5. NAPELLINA (*Hübschmann*).	No. 6. ACONELLA (*T. and H. Smith*).
Rhombic tables, or rarely prismatic crystals, without water of crystallization, forming crystallizable salts, unaltered at 100° C.	Amorphous, white, hydrated with 20 per cent. of water, fusible at 80°, and parting with its water of crystallization to be converted into a resinoid mass.	Similar in physical character to preceding, but much less pure and active, and more variable.	Voluminous crystals of a watery (sereux) aspect. Much less active than No. 2.	Amorphous resinoid appearance, alkaline, soluble, slightly hygrometric, insoluble in ether and chloroform. A narcotic principle?	Crystals which form in the acidulated extractive liquor of aconite root, prepared for the extraction of aconitia, and incompletely neutralized by the carbonate of soda, after two or three days' repose. They seem to be closely allied to *narcotina*, as they strike a red color with sulphuric acid containing a small portion of nitric acid and share none of the physiological properties of aconitia.

ORANGE TEA.

The Chinese scent their teas with orange-flowers. The method has been thus described:—"In a corner of the building there lay a large heap of orange-flowers, which filled the air with the most delicious perfume. A man was engaged in sifting them, to get out the stamens and other smaller portions of the flower. This process was necessary, in order that the flowers might be readily sifted out of the tea after the scenting had been accomplished. The orange-flowers being fully expanded, the large petals were easily separated from the stamens and smaller ones. In one hundred parts seventy per cent. were used and thirty thrown away. When the orange is used its flowers must be fully expanded, in order to bring out the scent. When the flowers had been sifted over in the manner described, they were ready for use. In the mean time, the tea to be scented had been carefully manipulated, and appeared perfectly dried and finished. At this stage of the process it is worthy of observing that, while the tea was perfectly dry, the orange-flowers were just as they had been gathered from the trees. Large quantities of the tea were now mixed up with the flowers, in the proportion of forty pounds of flowers to one hundred pounds of tea.

"This *dry tea* and the *undried flowers* were allowed to be mixed together for the space of twenty-four hours. At the end of this time the flowers were sifted out of the tea, and, by the repeated sifting and winnowing process which the tea had afterwards to undergo, they were nearly all got rid of."—*Good Health.*

PREPARATION OF PEPSIN.

Dr. Lionel Beale states that after many experiments he has settled upon the following method of preparing pepsin as the most feasible:—

Dissect off carefully the mucous membrane of a *perfectly fresh* pig's stomach, and place it on a flat board, cleanse it lightly with a sponge and water, so as to remove the particles of food and much of the mucus. Scrape it hard with an ivory knife, so as to squeeze out all the contents from the glands. The viscid mucus thus obtained contains all the pepsin with much epithelium. Spread it upon a piece of glass so as to form a very thin layer, which is to be dried at a temperature of 100° (no higher) F. over hot water, or in vacuo over sulphuric acid. When dry scrape from the glass, powder in a mortar, and trans-

fer to a well-stoppered bottle. With this a good digestive fluid may be prepared as follows:—

Take of Powder..... 5 grains.
Strong muriatic acid.....18 drops.
Water..... 6 ounces.

Macerate at a temperature of 100° for an hour; filter, so as to form a perfectly clear fluid.

The powder may also itself be administered in doses of from 2 to 5 grains, a little dilute hydrochloric acid being taken at the same time. The powder is odorless, and, taken with a little salt, tasteless. If kept dry, it will remain unchanged for a long time.

Pepsin prepared in this way is exceedingly active. Dr. Tuson found it 25 times stronger than the ordinary commercial brands.—*Medical Times and Gazette.*

PASTE OF PAPER AS A CLARIFIER OF SUGAR.

In *l'Union Pharmaceutique* for March, 1872, M. Magnes-Lahens contends for the superiority of paper to albumen as a means of clarifying syrups. He states his formula and method for simple syrup are as follows:—

Take of Sugar, in pound lumps....20,000 gr.
Water.....10,000 gr.
White filtering paper..... 24 gr.

A straining *muslin* bag of capacity of 8 to 9 litres.

Put the water, after having rubbed the paper up in it, in a large vessel, add the sugar, and heat, with constant stirring, until the temperature of 35° to 40° C. is reached and the sugar dissolved. Strain. After all has passed through the filter the felty mass still retains some 500 grammes. After impregnating the filter with a sufficient quantity of boiling water, express strongly, bring the sweet liquid to a syrupy consistency, add some paste of paper, and strain through a small filter-bag; in this way the waste is reduced to a minimum.

M. Magnes-Lahens says that this process is applicable to all syrups, giving greater clearness with greater rapidity than any other method in use. In all the syrups made from vegetable preparations, as decoctions, extracts, etc., the results of the use of paper paste is especially brilliant, much better than those of the ordinary filtering through paper; the time taken is much shorter and the resulting liquid much clearer.

He also states that the honeys and the oxymels are best prepared by this plan.

In the process the points to be attended to are—

1. The strainer must be cotton, not wool, and should represent in capacity a third part of the liquid to be acted on.

2. One gramme of paper suffices for one litre of water.

3. The paper must be unsized, white, and of good quality, and thoroughly reduced to a paste.

4. The syrup should be heated to 40° C. and not beyond it.

ON THE PREPARATION OF CHRYSAMMIC ACID AND CHRYSAMMATES.

Mr. William A. Tilden gives the following methods in *Pharmaceutical Journal and Trans.* of April 20 :—Fine Barbadoes aloes must be selected; and the variety which has a rich brown, not dark, color and powerful odor, yields the best result. One part of such aloes is dissolved by agitation with seven or eight parts of boiling water, slightly acidulated with hydrochloric acid. The solution is allowed to cool and to remain at rest for twenty-four hours, when it may be strained to remove the deposited resin. It is then evaporated down in an open dish till a syrupy consistence is attained, and there remains rather less than two parts of liquid. This, set aside for a day or two, solidifies in consequence of the formation of a mass of granular crystals. The whole is drained in a calico bag, and then submitted to gradually increasing pressure till entirely free from the black mother-liquor. In this way a lemon-yellow mass of barbaloin results, which amounts to from 20 to 25 per cent. of the aloes if a proper selection has been made. To render it quite pure, it requires one or two crystallizations from rectified spirit, but for the preparation of chrysammic acid this is unnecessary. It has only to be dried and powdered and introduced in small portions into about six times its weight of fuming nitric acid (sp. g. 1.45), kept cool. After standing a few hours, about half its volume of water is added and heat applied until, in consequence of the formation of deposit, the liquid bumps. During this digestion, a considerable quantity of carbonic anhydride escapes with the nitrous fumes. A further quantity of water is then added, and when cold the bright yellow crystalline deposit of aloetic and chrysammic acids filtered off. The liquid retains oxalic and picric acids, together with a small quantity of aloetic acid, which may be recovered by distilling away the nitric acid and washing the residue with water. The mix-

ture of aloetic and chrysammic acids thus obtained is dried and boiled gently for eight or ten hours with sufficient nitric acid to cover it. Water is again added, and the crystalline precipitate collected and washed till the washings become pink. It is then boiled for an hour with about an equal weight of potassic acetate dissolved in fifty parts of water. The solution thus obtained deposits on standing a copious crystallization of green sparkling potassic chrysammate, which may be washed with a little cold water. The mother-liquors, which retain potassic aloetate, are evaporated down, acidified by nitric acid, and the aloetic acid converted into chrysammic acid by further treatment with nitric acid, as already described.

Proceeding in this way, barbaloin readily yields more than a third of its weight of pure potassic chrysammate.

CHRYSAMMIC ACID.

Crystals of chrysammic acid are best obtained by dissolving potassic chrysammate in a considerable quantity of boiling water, and strongly acidifying the liquid with acetic acid. Thin yellow fern-leaves, a quarter of an inch long, mixed with a few long red crystals, are deposited in a few hours. On warming the whole gently, the latter are redissolved, and the yellow fern-leaves which are mixed with a few much smaller tables may be filtered off and washed. They consist of pure chrysammic acid; in mass they strongly resemble picric acid, but are more lustrous.

After exposure to dry air at ordinary temperatures for a few days, they suffer no loss of weight by heating to 150°C. Evaporated with pure sulphuric acid, they leave no residue.

LEAD CHRYSAMMATE.

Described by Schunck and Mulder as a red powder containing variable proportions of lead. It may easily be obtained, however, beautifully crystallized, by mixing a boiling solution of potassic chrysammate with a slight excess of plumbic acetate dissolved in boiling water and acidified with acetic acid. On cooling, long thin prisms, exhibiting a magnificent bronze reflection, are formed. The light transmitted by the crystals is pale red and strongly polarized, so that on viewing, by means of a lens, some of them suspended in the mother-liquor, the light is seen to be completely cut off, when two of them cross each other at right angles. Mounted properly, they form a pretty microscopic object.

Separation of Magnesia from Potash and Soda.—H. Scheerer publishes in the *Journal für praktische Chemie* (iii. 476) a new method of separating magnesia from potash and soda. It consists in evaporat-

ing a solution of the chlorides mixed with oxalate of ammonia to dryness in a platinum crucible. The residue is then dried, heated at first gently, and then to dull redness, treated with water, boiled and filtered. Magnesium carbonate will remain on the filter, while potassium and sodium carbonates will be found in the filtrate. This process is said to yield good results, but sulphates must not be present.—*London Pharm. Journ. and Trans.*

Vitrified Corrosive Sublimate.—M. Personné, pharmacien en chef de la Pitié, stated at the meeting of the French Academy of Medicine, Jan. 23, that he had prepared a vitrified corrosive sublimate, which, like vitrified arsenic, is more soluble than the crystalline form.—*Archives Générales de Médecine*, March, 1872.

New Species of Cinchona.—In the *Zeitschrift des Allgem. Oesterr. Apothek-Vereins* of March 10, J. Eliot Howard describes a new species of cinchona under the name of *C. rosulenta.*

To Detect Peanut-oil in Olive-oil.—The mode of detecting arachis-oil in olive-oil will also be interesting to those engaged in such investigations. The suspected oil is to be first saponified, and the fatty acids obtained in a free state by decomposing the soap with hydrochloric acid. By converting these acids into lead salts we are enabled to get rid of the oleate of lead, by its insolubility in ether. The soluble lead salts are once more decomposed with hydrochloric acid, and the resulting fatty acids are dissolved in the smallest possible quantity of alcohol at a temperature of 90 degrees. If arachidic acid be present, it will deposit in crystals from the solution on cooling; and if a quantitative analysis be desired, the acid can be further purified by alcohol and weighed. Any mixture over 5 per cent. may be thus easily and certainly detected. According to the experiments of Monsieur Renard, earth-nut oil contains 4.5 per cent. of arachidic acid.—*Food Journal.*

New Derivative from Strychnia.—Dr. C. Römer has found that by heating monochloro-acetic acid with strychnia for several hours a new crystalline base is formed.—*Zeitschrift für Chemie* von Beilstein, No. 14, 1871.

Tannic Acid formed from Gallic.—H. Schiff states that he has confirmed the observation of Dr. Löwe that arsenic acid converts at a boiling heat aqueous and alcoholic solutions of gallic acid into tannic acid.

Tests for Balsam of Peru.—According to E. Schwabe (*Archiv der Pharm.*), if 1 gramme of pure balsam of Peru is rubbed up in a

mortar with 4 or 5 drops of pure concentrated sulphuric acid, it makes a tough, kneadable mass, which on cooling is so tenacious that it may be raised out of the mortar by the pestle. If, however, castor-oil or copaiba balsam is contained in the balsam, the mass will be of the consistency of a salve—smeary.

Pure balsam of Peru has a sp. gr. of 1.40—1.60, but if it be adulterated with a fatty oil this is altered. Taking advantage of this, the following test has been proposed:—1 part of common salt is dissolved in 5 parts of water, so as to give a specific gravity of 1.25. If a drop of the balsam readily sinks in this it has not been adulterated by any of the ordinary adulterants. Tested in this way about $\frac{1}{3}$ of commercial balsam of Peru is found to be impure.—*Zeitschrift des Allgemein. Œster. Apot., April* 10, 1872.

Incompatibles of Perchloride of Iron.—In the *Bulletin Général de Thérap.* M. Bouilhon gives the following list of substances incompatible with the perchloride of iron:—

Salts of silver—Protosalts of mercury—Alkalies, carbonates, and bicarbonates—The arsenites and arseniates—Borax—Tannin and vegetable astringents—The gums—The vegetable extracts—The infusions of plants—Albumen—Casein.

New Method of Preparing Sulphuretted Hydrogen.—If paraffine be heated to the boiling point with an equal or greater bulk of sulphur, sulphuretted hydrogen is freely given off. If a pound of the mixture is put into a flask of proper capacity and heated, a sufficiently free current of the gas for ordinary purposes will be given off, and at any time the reaction may be suspended by a withdrawal of the heat. The paraffine is changed into a paraffine oil.—*Ibid.*

Analysis of Koumis made at Davos, Switzerland.—Sp. gr. at 50° = 1.1280. In 100 parts, water, 90,346; alcohol, 3.210; lactic acid, 0.190; sugar, 2.105; albuminates, 1.860; butter, 1.780; inorganic matter, 0.509; free carbonic acid, 0.177.

Reactions of Alcohol.—Mr. Hugo Tamm, in a brief abtract of certain experiments upon the action of permanganate of potash upon various substances, such as filter-paper, tartaric acid, coal gas, tallow, turpentine, benzole, alcohol, ammonia, etc., states that the two most interesting facts which he found were that alcohol boiled with an equal bulk of a solution of permanganate of potash was partially transformed into acetate of potash, and that in the same condition ammonia was converted into nitrate of potash.

TOXICOLOGY.

TOXICOLOGICAL CASES.

In Guy's Hospital Report for 1872, Dr. Thos. Stevenson has a paper with the above caption. The first case is that of a suicide who lived seventeen hours after drinking three fluid ounces of strong commercial nitric acid. Perforation of the stomach was found on post-mortem examination. The second case, is that of a man who died suddenly, apparently of asphyxia, some hours after taking a teaspoonful of strong liquor ammoniæ. At the autopsy, œdema of the larynx and of the lungs was found. The œsophagus was intensely red; the stomach normal. The third case is one of atropia poisoning, and contains nothing novel.

There are also two cases of mushroom poisoning; from what species was not ascertainable. The girl had taken but a single fungus, and three or four hours afterwards was seized with violent abdominal and cephalic pains. She vomited several times in the course of the day; was restless; had great thirst; occasional twitchings of the hands, and hot head with cold feet. During the night she slept but little, and suffered from increase of these symptoms. The next day she had some diarrhœa, and speedily recovered. The only treatment was warm abdominal fomentations.

The boy ate heartily and died in collapse in twenty minutes. On post-mortem examination the stomach and intestines were found much contracted, and their mucous membrane congested. The liver was very decidedly fatty.

ON THE ANTIDOTES IN ACUTE PHOSPHORUS POISONING.

BY PROF. BAMBERGER, OF WURZBURG.

Prof. Bamberger preludes this paper by the statement that the injurious agent in poisoning by phosphorus is the phosphorus itself, and not phosphoric acid. From this it follows, that after the inducing of

vomiting, which must always be the first step, the trustworthy antidote must have the power of preventing the vaporization of the particles of phosphorus still adhering to the mucous membrane. Substances having the power of oxidizing the phosphorus are *à priori* indicated. Upon this idea have been suggested liquor chlorini and burnt magnesia by Duflos, and chloride of lime by Scherer; these means of oxidation unfortunately act too slowly to be of any use.

As an antidote fulfilling in the highest degree the indications, Prof. Bamberger proposes the soluble salts of copper.

If a piece of phosphorus be treated with a solution of the sulphate of copper it will be almost instantly coated over with a black layer of phosphuret of copper, and in a little while upon this will be a layer of red oxide of copper.

In this state phosphorus does not volatilize at all, as it emits no smell, does not shine in the dark, nor evince the presence of fumes with paper moistened with the silver solution.

This action of the solution of copper must take place as readily in the stomach as outside of the body.

No opportunity has been afforded Prof. Bamberger to use this antidote, but Gerhardt and Vetter have done so with success

In the year 1868 Andant used the oil of turpentine, and others have followed the practice. Finally, Vetter (Virchow's *Archiv*, Band 53) made an elaborate investigation upon animals, and found that the rectified oil and the German oil possessed no antidotal power, but that the acid French oil did. Köhler recommends only the impure acid oil, and the apothecary Jonas (*Wöhler Annalen der Chemie*, Band 34) states that in such oil the phosphorus becomes embedded in a spermaceti-like crystalline mass, and is entirely harmless.

Prof. Bamberger considers that Vetter's experiments do not establish the antidotal power of the impure acid oil, as out of five animals two died, and two received doses probably not large enough to kill with certainty, and one vomited repeatedly directly after taking the phosphorus.

Köhler's experiments are not given in detail. Out of twenty-five animals only nine died, but his doses apparently were too small to be certainly lethal. Personne gave to ten dogs 100 to 300 milligr. each of phosphorus and 10 grammes of turpentine, and lost only two. Curie and Vizier, in a similar experiment, lost all, which Vetter and Köhler attribute to their having used the pure oil.

In order to test the comparative value of the antidotes in a purely physico-chemical manner, Prof. Bamberger took three pieces of phosphorus of the same weight, placed them in capsules of the same size, covered No. 1 with a solution of water, No. 2 with a solution of the sulphate of copper, No. 3 with French oil of turpentine, and connected

each with a small pump in such a way that the vapor could be drawn through a solution of silver. The capsules were then heated uniformly by a water-bath and the vapors emitted slowly drawn through the solutions. The results were: in nine minutes the solution of silver in No. 1 commenced to color, and in thirteen, contained a distinct brownish precipitate, in twenty-two was black; in No. 2 the silver solution, after seven hours, had only the slightest tinge of color; in No. 3, in two minutes the silver solution commenced to change color, and in three-and-a-half minutes was deep black.

Prof. Bamberger was surprised at this result, and repeated the experiment, only keeping the phosphorus at the temperature of the room. In this trial the oil of turpentine and phosphorus changed their silver solution to an intense metallic black, before that of the water and phosphorus was distinctly affected.

Prof. Bamberger thus shows that the peculiar coating of phosphorus, which Jonas has stated occurs when the latter is placed in turpentine, occurs only slowly and probably not at all in the human stomach.

He finally details the experiments made upon rabbits by himself; in one set of these turpentine was administered after the phosphorus, in the other the coppery solution, and concludes as follows:—"From these experiments small doses of phosphorus, combated by means of turpentine, rapidly killed the rabbits, whilst, when the solution of copper was used, death only followed after the expiration of twice the length of time required by the first method, and after twice the dose of the poison; facts which certainly show the superiority of the solution of copper. Upon these grounds I believe I am correct in affirming that turpentine is not an antidote to phosphorus, and, as far as is known, the soluble salts of copper afford the most rational and successful treatment."— *Wiener Med. Presse*, January 21, 1872.

SYMPTOMS OF POISONING PRODUCED BY THE INJECTION OF A STRONG SOLUTION OF SULPHATE OF ZINC INTO THE VAGINA.

BY A. K. MINICH, M.D.

Mrs. G., aged 28 years, the mother of three children, was in the habit of using a solution of acetate of zinc by injection, for the relief of a leucorrhœa with which she was suffering.

I was summoned one morning in haste to her side, and learned that she had just injected about two drachms of sulphate of zinc in solution into her vagina. Soon afterwards she felt severe pain in the region of

the groin, which was followed by sickness at the stomach, and a feeling, as she subsequently described it, "as though her blood could scarcely struggle through her veins." That which first arrested my attention upon seeing her was a deadly pallor of the skin, which was milky in its whiteness. Her features were shrunken, her eyes almost fixed and of a peculiar bright lustre, tongue partially paralyzed, pulse rapid and scarcely distinguishable, at times dicrotic. The whole surface of her body was cold, and covered with a clammy perspiration; her general appearance and condition indicating a profound constitutional depression, and, as it seemed to me, a speedy dissolution. Large quantities of milk were immediately thrown into the vagina, to wash out and neutralize any poison that might still remain; ammonia and brandy were freely administered; sinapisms were applied to her chest, and cloths wrung out of warm water to her extremities. In about half an hour she began to rally, and continued to improve until recovery was complete. The milk drawn from her breast soon after my arrival at once separated into two portions,—a lower thick mass, looking like coagulated milk, and an upper thin and watery portion. Unfortunately, the milk drawn was lost, preventing a closer examination. Her child—a suckling—was removed from the breast until the third day, when it again took it without any untoward symptoms arising.—*Phila. Med. Times*, March 1, 1872.

GOOD NEWS FOR SMOKERS AND BEER-DRINKERS.

Smokers will be pleased to know from the report of Mr. Phillips, of the Inland Revenue Department, that during 1870 tobacco was very extensively adulterated, 312 samples out of 432 having been weighed in the balance and found wanting, the adulterating materials being wheat, rice, starch, sugar, liquorice, lampblack, and coloring-matter. With the exception of the lampblack, with the taste of which we are not acquainted, the offending matter was not very deleterious, and perhaps in many cases did more good (or less harm) than the real cavendish, which was the tobacco usually selected for practising on. The report on the beer is less satisfactory, for out of 14 samples examined 9 were adulterated with sugar, treacle, ground rice, liquorice powder, grains of paradise, and (in one instance) tobacco. It will be allowed that adulteration of 65 per cent. of the samples is a tolerable allowance, and we have very little doubt that from the smaller class of breweries a vast amount of poisonous matter is constantly poured forth, to be further improved by the "doctor" and the publican.—*Food Journal.*

POISONING BY CHAGRES' PILLS.

Dr. Juan Calixto Oxamendi related his experience to the Academy in a case of chronic poisoning by Chagres' pills.

He stated that in last August he had been consulted by a Mr. Rodriguez Navarrete, who had been suffering with malaria, contracted in the country, and for which he had taken without any good effect, first quinia, then the Indian Cholagogue, and at last Chagres' pills, a remedy used with success in that section of the country, and of which he took two boxes before he could stop the paroxysms; but not feeling well, and noticing a gradual loss of strength, and emaciation, he consulted Dr. Oxamendi.

Dr. Oxamendi stated he found in his patient all the symptoms of what Van-Hasselt calls medicinal poisoning by arsenic. This poisoning "may be dangerous and even fatal in some cases" (Van-Hasselt, vol. 2, page 234 of the German translation, from the 2d Dutch edition).

Then Dr. Oxamendi enumerated several arsenical preparations, well known or secret, all of which may produce the poisonous effects.

Rodriguez Navarrete could stand as a type of this chronic poisoning. He had gastralgia, dyspepsia; he had emaciated almost to atrophy, particularly in the lower extremities, with anæsthesia and almost paralysis. Gangrene did not occur. The hoarseness, found with few exceptions in arsenic eaters and others under its influence, was very characteristic in this case. Navarrete already presented the arsenical dyscrasia, as shown by the condition above described, and the symptoms of chronic gastro-intestinal inflammation, as well as by the dirty color of the skin, the injected eye, the dark color of the lower eyelid, and the livid lip. Dr. Oxamendi described then other symptoms of a more advanced stage, and of which only the so-called *Rheumatismus Arsenicalis* was present in the case. The urine was not examined.

Dr. Oxamendi stated that diuresis and diaphoresis are recommended in these cases, especially in the shape of steam and sulphurous baths. To eliminate the poison from the system he advocates the use of sal ammoniac, as recommended by Hannon, in small doses, at first 0.03 grammes, morning and evening, and increasing to 0.15. This author explains its action by the following theory: Arsenious acid combines in the prima via with soda, and enters the system as an arsenite of soda, where meeting with the phosphate of lime it forms arsenite of lime, but little soluble, and phosphate of soda. The muriate of ammonia forms with these salts a soluble ammonio-chlorate of the arsenite of lime. Following this treatment, Mr. Navarrete was restored to health.

Dr. Oxamendi then asserted that these pills have been sometimes very successful, and that he would like to know their exact composition. They are said by some practitioners and pharmaceutists to contain arsenious acid and quinia.*—*Anales de la Real Academia de Ciencias Médicas, Fisicas y Naturales de la Habana*, September 15th, 1871.

PATHOLOGICAL ANATOMY OF CHRONIC LEAD POISONS.

Drs. A. Kussmaul and R. Maier have a paper of some length with the above caption in the February number of the *Deutsches Archiv für Klinische Medecin*. It is chiefly occupied with the discussion of a case, of which the following is an outline:—

A man 35 years old had suffered for many years from chronic lead poisoning. The symptoms consisted of a pale yellowish skin, dyspepsia, constipation and abdominal pain, which twice in the latter part of his life amounted to severe lead colic, with dysuria, and slowing of the pulse. In the second of these attacks he died. In the beginning of it there was constipation with vomiting of yellowish matters, and afterwards profuse diarrhœa, at first fæcal, but at last the material passed was simply a yellowish liquid free from fæcal smell. This was accompanied with great strangury, and soon led to collapse, in which the patient died. At no time during life were there any decided nervous symptoms.

On post-mortem, the following lesions were found: 1. General emaciation. 2. Very great post-mortem rigidity of the heart and voluntary muscles 19 hours after death. 3. Marked icterus. 4. Marked dilatation of the stomach. 5. Chronic catarrh of the mucous membrane of the stomach, intestines, and ductus choledochus. 6. Atrophy of the glands of the stomach by fatty degeneration. 7. Slight fatty degeneration of the muscular wall of the stomach, especially near the pylorus. 8. Marked atrophy of the mucous membrane of the jejunum, ileum, and upper part of the colon, both of their stroma and their glands, the first in the form of thinning, the latter of fatty degeneration; especially atrophy of the intestinal villi, the glands of Lieberkuhn, and the solitary and Peyerian follicles. 9. Great thickening of the submucous layer of the stomach and of the intestines, by a hypertrophy of the areolar tissue and thickening of the sheaths of the arterioles, even to the obliteration of the lumen. 10. Fatty degenera-

* I am indebted to my pupil, Jno. Guitéras, for this abstract translation.

tion of the muscular coat of the intestines, chiefly of the small intestine. 11. Marked pigment degeneration of the heart muscle. 12. Slight periarteritis in the cortical layer of the brain. 13. Hypertrophy and sclerosis of the cellular tissue septa of many of the sympathetic ganglia, especially of the cœliac and upper cervical.

SOME OBSERVATIONS ON POISONING BY CANTHARIDES.

Dr. Pallé describes the case of some soldiers who had drunk by mistake a large quantity of tincture of cantharides. He says:—I shall never forget the sight that struck my eyes as I entered the ward; scattered in the room, some, squatting, were making painful efforts towards micturition and defecation, passing with difficulty bloody urine and red and viscid matter; others, bent on their beds, were vomiting repeatedly; and a few, pale and stricken down (paraplegic), were suffering intense agony. In general, the face was congested, the eyes sparkling, the pulse fast and frequent, the skin covered with sweat; the features, distorted on all sides, showed the most intense terror. The state of the urino-genital organs was worthy of special attention. The penis was swelled and painful, but not rigid; none of the patients was affected with the slightest amatory desire or priapism; vesical and rectal tenesmus, and dysuria were noticed in all the patients. As to the digestive organs, a feeling of burning and constriction in the throat, epigastralgia, vomitings of bilious and alimentary matter were noted, but no convulsions or delirium, no other cerebral symptoms besides the excitement caused by the sufferings and terror of the patients. The treatment was: emetics followed by warm baths; afterwards camphor and opium in emulsion, flaxseed tea, oleaginous injections, and poultices on the hypogastric region, under which all the patients eventually recovered.

Dr. Pallé wishes to call the attention to three salient points in the facts observed in cantharides poisoning: (1) the albuminuria; (2) the peripheric paraplegia, and (3) the total absence of aphrodisiac symptoms.

All the patients discharged albuminous urine in variable quantities. In the beginning the water was sanguinolent and albuminous in the same time, and when, the renal hemorrhage having ceased, the liquid assumed its natural color, all traces of albumen had disappeared. The duration of the symptoms varied from 4 to 8 days.

The improvement was very rapid; as soon as the irritation of the

urinary organs subsided, the medulla recovered its normal excitability, and the paralysis of the inferior members disappeared in a short time.

Only one of the patients was affected with incontinence of urine, which still existed six months after the accident. As this infirmity did not exist before, it must have been caused by the cantharides. —*Journal de Phar. et de Chemie*, June, 1871.—*Physician and Pharmacist.*

CARBOLIC ACID POISONING.

Dr. W. E. Taylor relates (*Phila. Med. Times*, May 1) a case in which an ounce (by estimation) of the strong pure acid was taken undiluted.

Dr. Taylor says:—Two minutes after taking the poison, the patient was totally insensible; pulseless; pupils dilated; face pallid and pinched; the respiration was of a gasping character, and there had been an involuntary discharge of urine. The interval between the respiratory acts became longer, and, after one or two partial efforts, life ceased; respiration continuing for several seconds after the cardiac impulse ceased to be perceptible.

There were no convulsions nor vomiting; nothing beyond the condition above described. Death took place in about three minutes after the fatal draught.

There was a strong odor of carbolic acid in his breath, but no trace of it about his lips or face.

Post-mortem examination, thirteen hours after death. Rigor mortis well marked. Body well nourished; skin pallid, with some post-mortem discoloration about the shoulders, back, and hips.

Upon opening the abdomen, the odor of carbolic acid was very perceptible; the viscera were in a good state of preservation. The stomach was moderately distended, and intensely congested externally, being of a dark venous hue. Upon being opened, it was found to contain about one pint of a whitish-colored liquid smelling strongly of carbolic acid, and some undigested food having also the same odor. After removing the contents, the whole of the mucous lining gave positive evidence of the corrosive effects of the poison,—showing the characteristic white appearance. Beneath this white film the mucous membrane was intensely congested, of a chocolate color, strongly corrugated,—thicker, tougher, and much more rigid than normal. This condition was especially well marked in the cardiac extremity and along the greater curvature, and also in the lower end of the œsophagus, and in a less degree along the lesser curvature and at the pyloric

extremity, although no part of the internal surface of the viscus had entirely escaped.

The scalp and the meninges of the brain were very much congested, the vessels being filled with fluid blood of a dark color. There was no effusion of blood or serum either beneath the membranes or in the ventricles; and, with the exception of a very few bloody points of small size in the cerebrum, and some injection of the choroid plexus, the remainder of the cranial contents seemed to be in a normal condition.

The most marked feature in this case was the rapidly fatal result. It might almost be termed instantaneous, as, from the most careful estimate, not more than *three minutes* could have elapsed from the swallowing of the acid until death ensued.

Two modes, in accordance with which the death was produced, have suggested themselves,—viz.: 1. By its powerful irritant effect, applied, as in this case, instantaneously to the whole lining membrane of the stomach and œsophagus,—thereby causing "death from shock" in the same manner as a blow upon the epigastrium; or,

2. After absorption, by its anæsthetic and paralyzing effect upon the sympathetic and pneumogastric nerves and their connections, thereby suspending or destroying their vital action, and bringing about cessation of function in important organs supplied by them,—as the brain, heart, and lungs.

It is a well-established fact that concentrated carbolic acid, when applied to the skin, produces decided anæsthesia in a very short time. Dr. W. H. Jones, U.S.N., has upon several occasions applied the acid to the skin of his forearm, with the effect of lessening its sensibility in about twenty seconds to such an extent as to allow the part to be freely incised without pain.

It has been used upon several occasions on board ship to mitigate pain in opening buboes, etc., and always with good effect; and, if it causes anæsthesia when applied externally, there is no reason why the same effect should not be produced when it is applied internally; it therefore seems reasonable to suppose that the rapidly fatal effect of carbolic acid in this case can be accounted for in a satisfactory manner by its anæsthetic and paralyzing effect upon the great nervous centres, following its immediate absorption from the stomach.

Dr Harley relates a case of poisoning from an ounce of red impure carbolic acid. The patient never rallied from the shock which attended the taking of the drug, although death did not take place for five hours and a half. Active medical assistance was rendered in fifteen minutes after the poison was taken, and he could then be aroused sufficiently to speak.—*Medical Press and Circular.*

ALCOHOLIC PARESIS AND PARAPLEGIA.

Dr. J. Lockhart Clarke believes that alcoholic paraplegia is generally preceded by various nervous symptoms, giddiness, a sensation of being lifted from the ground, a sensation of choking on going to sleep, numbness, various pains, chronic tremulousness, fibrillar quivering of the muscles, unsteadiness of gait, and general uncertain control of voluntary motion, imperfect articulation from this cause, loss of energy, etc. For these symptoms he has found most useful full doses of nitro-muriatic acid, with a little of Battley's sedative solution. And after a few doses of this, with some mild purging, he combines the acid with perchloride of iron, quinine, and strychnia, and the occasional use of the Turkish bath.—*London Lancet*, March 30, 1872.

In a previous number of the same journal Dr. Saml. Wilks bears testimony to the existence of alcoholic paraplegia, and states that the most important part of the treatment is the sudden and complete withdrawal of the stimulus—that *delirium tremens* in his experience never results, although he has had numerous and very bad cases. He recommends "the ordinary treatment, and especially the use of such medicine as the iodide and bromide of potassium before the use of galvanism and tonics."

POISONING BY CORROSIVE SUBLIMATE.

Dr. G. S. Galee reports the case in the *Medical and Surgical Reporter* of Mrs. S. æt. 40, who took purposely a large quantity (by estimation ʒ j.) of the bichloride of mercury. The doctor found his patient, half an hour after the ingestion of the poison, bolstered up with pillows in a sitting position; saliva was copiously flowing from her mouth; countenance pinched, anxious, and of a bluish-white hue; the whole surface was cold, and bathed in a profuse clammy sweat; the pulse was small, weak, and beating sixty to the minute.

Her sufferings were terrible. She complained of a styptic, acid, metallic taste, burning and constriction of the throat, burning, griping, and tearing pains of the stomach, accompanied by a deathly nausea, but no vomiting. She had, previous to his arrival, thrown off half an ounce of mucus. The doctor administered large draughts of warm water, and, after the stomach had been repeatedly washed out, white

of eggs and milk. The vomiting continued and became very severe, and finally fresh blood and patches of congested mucous membrane were thrown up, followed by alarming prostration. Half a grain of morphia given by the mouth immediately checked the vomiting. In three-fourths of an hour the dose was repeated, and afterwards smaller quantities of the alkaloid given. White of egg and milk were also exhibited from time to time. Forty-eight hours after the taking of the mercurial she had 4 liquid (one bloody) stools, with severe griping. Ice was used for the intense thirst she suffered. The final result was recovery.

Butyric Acid as a Preventive of Phosphorus Reactions.—It being desired to examine a fermented mass of sugar, milk, coffee, and bread, for phosphorus, all the reactions failed, even with the Mitscherlischen apparatus. Roussin, however, found that the free butyric acid masked the phosphorus; for when this was neutralized by carbonate of potash, testing in the Mitscherlischen apparatus afforded very evident proof of the presence of phosphorus.—*Vierteljahrschr. für Prakt. Pharm.*

Strychnia Poisoning Treated by Chloral Hydrate.—Dr. Angus Macdonald relates in the *Edinburgh Medical* for April, 1872, a case of strychnia poisoning. The man had been taking four drops of the *liquor strychniæ*, Br. Ph., for a long time, and one morning took an overdose. Three-quarters of an hour afterwards he reached the doctor's office in a cab, suffering from severe tetanic convulsions. Chloroform was given by inhalation, but as soon as the anæsthesia passed off the spasms recurred. Thirty grains of the chloral hydrate were given, and in seven minutes the spasms having notably abated, twenty-eight grains more. From this time the convulsions became rapidly less and less fequent, and in about twenty minutes the patient fell asleep and had no more spasms.

Poisoning by Goanj (Seeds of Abrus Pecatorius).—Dr. A. S. G. Jayakar reports in the *Indian Medical Gazette* for December, 1871, a case of poisoning by the seeds of Abrus pecatorius. A man, two hours after taking forty seeds, was taken with severe vomiting and purging, which continued until his admission into the hospital some hours afterwards. At that time he was profoundly collapsed, still retching but not purging, and suffering from cramps und suppression of urine. Under appropriate treatment he finally recovered. Dr. Jayakar remarks the symptoms throughout most closely simulated those of cholera.

POISONING BY VANILLA-ICES.

The German medical journals call attention to the circumstance that several cases of poisoning by vanilla-ices have in late years occurred in Paris, Altona, Munich, Vienna, and other places. Maurer has recently related an instance in which, after the use of these ices, a large family suffered from the symptoms described as having been present in the other cases, viz., frequent vomiting and diarrhœa, assuming in some of the patients a choleriform character. All the patients recovered. What the nature of the poison may be has not yet been ascertained. In two observations on the remaining portions of the poisonous ices, traces of lead, iron, and tin were present; but the combination of lactic acid with oxide of tin has been ascertained not to be poisonous. Schroff believes that the poison is produced by the use of cashew-nut oil to besmear the vanilla-pods.—*Medical and Surgical Reporter.*

DEATH FROM THE INHALATION OF NITROUS OXIDE GAS.

BY W. J. PURCELL, M.D., OF NEW YORK CITY.

On Wednesday, March 20, Mrs. Ann O'Shaughnessy took the gas for the painless removal of some teeth. One bagful, containing about four gallons, was administered, but not without great trouble from the struggles and resistance of the patient, who appeared to labor under severe nervous irritability. This not being sufficient to produce anæsthesia, a second bagful was given, and after a few inhalations the dentist proceeded to extract the teeth. About four were removed, when the patient's head was observed to fall over on her left shoulder, and she was discovered to be insensible. Efforts were made to revive her, but in vain. At the post-mortem nothing was found save some lung congestion. At the coroner's inquest it was made out that the gas was probably pure, but that the mouth-piece used was imperfect, allowing the carbonic acid to be rebreathed.—*Medical and Surgical Reporter.*

TOXICOLOGICAL NOTES.

It is stated in the *Chemical News* that Dr. James St. Clair Gray, Assistant to the Professor of Medical Jurisprudence in the University of Glasgow, has read a paper to the Chemical Section of the Glasgow

Philosophical Society, "On Certain Fallacies in the Means of Detecting some Poisons." He pointed out that Reinsch's test for arsenic is liable to fail when the arsenic has undergone oxidation to arsenic acid, or when it exists in the state of sulphuret. He advises the reduction of the arsenic acid by means of sulphite of an alkali; and in the instance of the sulphuret, he would boil with caustic potash and dialyse. He notes also that the presence of alcohol, chloroform, or ether prevents the precipitation of the red iodide of mercury.—*British Medical Journal*, March 16, 1872.

Alcoholic Poisoning—Hypodermic Injection of Tartar Emetic.—In the *Indian Medical Gazette* of Nov. are reported two cases of acute cephalic congestion, presumably from alcohol, in which ¼ grain injections of tartar-emetic were practised, apparently without causing emesis.

Poisoning by Chloral Hydrate.—A person who suffered from palpitation and shortness of breath took four grammes of chloral hydrate. (about ʒ j.) in water, and shortly afterwards anæsthesia was so complete that two teeth were drawn without causing pain. Immediately after the operation the face grew red and then pale, and in some minutes the patient was dead. At the autopsy the lungs were found somewhat tuberculous, the left heart with thin walls, the tricuspid valve hardened and stiff, and serous effusion in the pericardium, pleural cavity, and between the membranes of the brain.—*Centralblatt für die Medicin Wissenschaft*, March 16.

Glanders Cured.—A case of glanders in a man, cured by the internal use of carbolic acid, is reported in the Proceedings of the Minnesota State Medical Society.—*Georgia Medical Companion.*

Aconitia.—In the *L'Union Pharmaceutique* for February, 1872, M. Duquesnel has a paper upon the salts of aconitia and the different varieties of the alkaloid.

He found that when a sparrow was poisoned with a half milligramme of the alkaloid the following results were obtained:—With crystallized aconitia, death in one minute. With aconitia of the French Codex (Hottot), death in fifteen minutes. With German aconitia (Merck), death in an hour and fifteen minutes. With French aconitia (Commercial), death in two hours. With napelline (of Hübschmann), profound sleep—not followed by death.

A number of repetitions of this experiment gave substantially the same result.

The Milk of Cows affected with Rinderpest.—M. Husson analyzed the milk of cows affected with the rinderpest. There were 22

cows in three stables; four of them were profoundly affected, 14, more or less, doubtfully so, and 4 were still apparently healthy.

	Milk of healthy Cows.	Milk of slightly sick.	Milk of very sick.	Normal Milk.
Butter	16.96	14.93	12.60	30
Sugar	33.90	31.40	16.45	50
Casein	.....	50.25	.....	34
Albumen	.....	20.60	.....	6
Salts	.....	18.50	.....	7

The milk of the affected cows had a more or less pronounced reddish-yellow color.

If the rinderpest has broken out in a stable all the animals are more or less affected, and the milk as well as the flesh is capable of imparting the disease, both to man and animals. From the commencement of the disease the proportion of sugar and butter diminishes greatly, and that of casein and albuminous matter rises.—*Chem. Centralblatt*, III., Nov. 1, S. 8.

Test for Nitric Acid in Water.—According to Edward Nicholson (*Madras Monthly*, May, 1871), brucia offers a more delicate test for nitric acid and the nitrates, when employed by evaporation of the suspected liquid to dryness, the addition of a drop or two of strong sulphuric acid, and the application of a fragment of brucine, than when the test-tube, as commended by Dr. Parker (Manual of Hygiene) is used. Mr. Nicholson found that the residue left by the evaporation of 1 c.m. of water containing one-tenth milligramme of the nitrate of potash gave a distinct rose color with the alkaloid.—*Chemical News*, Feb. 23, 1872.

Influence of Aniline and other Petroleum Colors on Man.—W. Mayer states in the *Bayerische Industrie* and *Gewerbe-Blatt*, Jan., 1872, that when these colors are pure they are toxicologically inert; that the aniline colors often contain arsenic and picric acid, and the phenol pigments (coralline, etc.) carbolic acid, to which impurities their poisonous powers are solely due.

Zinc in Water.—In Guy's Hospital Report, 1872, Dr. Thomas Stevenson says that water, running through galvanized pipes, often contains largely of zinc, and that the best test for that metal in water is the addition of the ferrocyanide of potassium to the clear water, previously acidulated with hydrochloric acid. If any zinc be present a whitish precipitate will result.

Opium Poisoning.—In the Philadelphia *Medical Times* of June 1, Dr. Chas. G. Smith and H. C. Hand, after detailing a case speak as follows:—

"To recapitulate, the points of interest in this case are: 1. That one and a half fluid ounces of laudanum were taken, the most of which was absorbed. 2. The hypodermic injection of one-sixteenth of a grain of atropia dilated the pupils widely, but had *no effect whatever* on the pulse, respiration, or color of the skin. 3. The magneto-electric and faradic currents were each found more useful for being intermitted and alternated. Benefit was also noted from occasionally shifting one pole from over the position of the phrenic nerve to the spinal column. 4. By far the most important remedial measure used was ARTIFICIAL RESPIRATION. During three hours it was continuously persevered in, with the constant hope that natural respiration would come to our relief. Twice in this time an attempt at such respiration became apparent. This, favored by the use of the batteries, continued each time about five minutes, when it ceased and the pulse became small and fluttering. For these three hours of vital importance, death was kept from assuming his dominion only by rhythmical breathing performed mechanically for the patient, not by him. At the close of the third hour, the vital forces—the heart's action especially—were failing, in spite of the artificial respiration, and it seemed almost certain that this means could preserve life but little longer. Magneto-electricity, with unexpected efficacy, now furnished the stimulus needed to strengthen the heart and elicit those first evidences of return to life so grateful to his almost hopeless attendants. The method of respiration used was Sylvester's, with an occasional change to that recommended by Dr. Benjamin Howard. Both methods were efficient; the change from one to the other was beneficial, because in this way the operator obtained a little rest, and because deeper respirations could be forced on making the change after the chest had become accustomed to one method.

In conclusion, we might mention another case of opium-narcotism in a young woman which was nearly as profound as this, and in which we had the satisfaction of seeing signs of life return after a steady perseverance in artificial respiration for an hour and a half. Five grains of morphia had been taken and retained three hours before she was seen. When we first saw her there was only an occasional respiration, which soon entirely ceased. The stomach-pump could not be used, for we did not dare to intermit the artificial respiration long enough for it. No atropia and no electricity were used.

Diaper-Pin.—Dr. O'Hara says (Philadelphia *Medical Times*):

In one case a safety diaper-pin was passed—maliciously, there was reason to believe—into the œsophagus of a child, where it remained until, suffocation being imminent, it was pushed down into the stomach by the child's mother, who had previously attempted in vain to remove it through the mouth. The diaper-pin, which was of silver, gave rise to no irritation whatever during the whole time it remained in the digestive tract, the bowels continuing to perform their functions regularly. It was voided five months and three days after the date of the accident.

Phosphorus Poisoning.—Dr. Dound relates the case of a woman who drank, with suicidal intent, some water in which three large packets of matches had been boiled for half an hour. Shortly after the act she suffered slight burning pains in the œsophagus and stomach. Five hours afterwards she drank large quantities of milk, which brought on severe, incessant vomiting, which continued until the arrival of Dr. Dound, and afterwards for many hours. He found her with pale, contracted face; the breath alliaceous in odor; the pulse contracted, 96; the voice feeble; the matters vomited scanty, mucous, containing no phosphorus. There was pain and tenderness, slight in the epigastrium, very marked in the right hypochondrium. There were no evidences of enlargement of the liver, and no jaundice. Hydrate of magnesia to be taken in large quantity, diffused through water, deprived of its air by boiling, and oil of turpentine in capsules, were prescribed. By evening two grammes of the latter had been retained, none of the former. No urine was passed until late the next day (the third after the poisoning). By this time the conjunctiva had become icterode, the right hypochondrium very painful. The pulse was 84°, and the temperature $36\frac{4}{5}°$ C. The turpentine was continued. On the fourth day the vomiting had greatly abated. The urine was not albuminous, and gave off the odor of violets. There was still severe pain in the hypochondrium. From this time the patient slowly convalesced, remaining for a long time weak, without appetite, and anæmic.—*Revue de Thérap. Medico-Chirurgicale*, May, 1872.

The Vegetable Poison Maschi.—K. F. Appun, in his "Travels," speaks as follows of this nearly unknown poison:—

The Serekongs of British Guiana prepare the fearful poison, known as *Maschi*, which is made out of the rootstocks of *Arum venenatum* W., and has an arsenical look. The rhizomes are dried in the sun and reduced to a fine powder, which is preserved in quills. According to the dose, the poisoned persons may live on for months, gradually wast-

ing away, and finally die in torments, or he may give up the ghost after an hour of terrible, burning, intestinal pain and repeated spasms.

The poisoner places the powder upon the lips or on the nostrils of his victim whilst asleep, in such a way that when he wakes he will draw it in with his breath, or lick it off his lips; or else he gives a feast to his victim, and, after drinking himself from the full calabash, hands it to him, holding it in such a manner that his thumb is plunged into the liquid, and the poison which has been concealed under the nail is dissolved out.—*Vierteljahrschr. für prakt. Pharmacie*, Heft 2, 1872.

Poisoning by Yew Leaves.—According to the *Imparziale*, the first fatal case of this recently happened near Turin. A girl, nineteen years old, took as an emmenagogue an infusion of Yew leaves representing daily 120 to 150 grammes of leaves for three days, and 200 grammes the fourth day. After the fourth day's allowance she was seized with uncontrollable vomiting and died in eight hours. At the post-mortem nothing abnormal was made out.—*Ibid.*

Influence of Sugar upon Magnesia as an Antidote to Arsenic and other Metals.—Carles, who discovered that sugar rendered magnesia as well as lime much more soluble than normally, attempted to use the saccharine solution of magnesia as an antidote to arsenic, but to his surprise found the arsenical-magnesian salt rendered itself soluble by the sugar. Sugar, therefore, makes magnesia of no use as an antidote to the poison spoken of.

If, however, the saccharine magnesia is employed against the compounds of lead, copper, antimony, and quicksilver, it acts by decomposing them, not by uniting with them, and the sugar aids in the reduction of the oxide.

The saccharine magnesia seems, then, to be a good antidote to the metallic salts, with the exception of those of arsenic. The best formula for it appears to be as follows:

Take of Magnesia (Henry's ?).....	2½ drachms.
Sugar.....	5½ drachms.
Boiling water.....	3 ounces.

Dissolve.

—*Vierteljahrschr. für prakt. Pharm.*, Heft 2.

Yeast a Poison for Bees.—According to Mirus, if a little yeast be mixed with honey, bees will take it greedily and be poisoned by it. —*Ibid.*

FALSIFICATION OF ESSENCE OF BITTER ALMONDS BY NITRO-BENZINE.

BY M. EDME BOURGOIN.

DIFFERENT methods have been suggested for detecting this falsification, but none of them is quite satisfactory. It has been proposed to take advantage of the different specific gravities of the substances, but the lightness of the benzine can always be counterbalanced and concealed by the addition of alcohol or some other suitable liquid.

Drajendorff proposes to add to some drops alcohol a very small quantity of the essence and add thereto a globule of sodium; the coloration becomes more deep in proportion as the nitrous substance is more considerable.

Another method is to distill the mixture in the presence of iron-filings and acetic acid, and add to the product a trace of lime, according to the method of M. Berthelot, and to seek to develop a bluish violet color by the addition of solution of hypochlorite of lime. This process is excessively sensitive when the pure nitro-benzine is operated on, but the presence of oil of bitter almonds interferes most singularly with the reaction.

The following simple method is now proposed as efficient:

Treat a small quantity of the suspected liquid in an assay tube with little less than its weight of caustic potash; agitate to favor the action of the alkali. If the essence be pure it takes a yellowish color; if it contain nitro-benzine, this yellow soon passes to a yellowish red and in a few minutes to green.

If a small quantity of water be now added the mixture plainly separates into two layers, the inferior yellowish, the superior green, which becomes red in a day or so.

Alcohol, instead of interfering with this reaction, appears to favor it. The green color develops more rapidly when the mixture is heated. —*Journ. de Pharmacie et de Chemie*, April, 1872.

CURE OF NITRATE OF SILVER STAINS.

IN the *American Practitioner* of June, 1872, after some general remarks, Dr. L. P. Yandell says:

The two cases which have suggested this report are similar in many respects. Both had been treated unsuccessfully for epilepsy by nitrate of silver. Both contracted syphilis, and for tertiary symptoms got

iodide of potassium. This drug was given in from ten to sixty grain doses, thrice daily, for a number of months, in connection with ferruginous or bitter tonics. One of the patients was forced to discontinue the iodide because of its disagreeable effects upon the system. The other took it until all traces of syphilis had passed away, and he increased in flesh under its use. In both cases the fading of the stains was gradual. In the first case there is a faint trace of discoloration remaining, though it is scarcely perceptible. In the second, which was much the darker of the two, there is not a shadow of the disfigurement. The iodide of potassium was not given in either case with reference to the cyanosis, and its beneficial effects were observed by me accidentally more than a year after their occurrence. It may be well to state that both patients were treated by the moist mercurial vapor-bath during much of the time that they were using the iodide of potassium, and the abundant diaphoresis may have assisted the action of the iodide.

DISPENSING OF POISONS.

Mr. Wm. C. Baker proposes the following method of preventing mistakes:

1. All bottles on the shelves containing such substances as tincture of aconite root, tincture of digitalis, Fowler's solution, tincture of opium, tartar emetic, bichloride of mercury, etc., are of blue glass, with a red caution label on the back of each bottle.

2. Extracts of aconite, belladonna, nux vomica, opium, digitalis, etc., are contained in the ordinary jars properly labelled—and then enclosed in a tin can, also labelled with red letters painted on the tin.

3. The powerful alkaloids, as strychnia, veratria, atropia, morphia, and such articles as arsenic, hydrocyanic acid, etc., are kept in their original bottles, in a closet under lock and key, and when dispensed, the assistant dispensing calls another to witness that the article and quantity dispensed corresponds with the prescription; a note is taken by whom the prescription was *vised*.

This plan, strictly adhered to, furnishes an efficient safeguard, and is attended with so little trouble that it may be readily adopted in every store.

All my labels for poisonous drugs, liniments, and medicines for external applications, are printed on bright red paper—some of which have a *sanded* border. The object of this is that even in the dark, by the sense of touch, they may be distinguished from other labels—

whilst their color and peculiar appearance in the daytime will render them conspicuous.

The sanding of the labels is attended with some trouble, and I find it necessary to do it in the store; but nothing should be considered too troublesome that will guard human life from the possibility of accidents in the dispensing of medicines. Labels may be sanded by covering the part to be sanded with thick elm water, and then dusting over it No. 1 flint sand, and allowing them to dry.

Bottles of various colors have been used in dispensing poisonous medicines, and preparations for external application, but the shape has always corresponded with those of white glass, and the distinction has not been sufficiently marked. I have used for medicines for external use a three-sided black glass bottle, which has answered an excellent purpose. I have improved on this by having on each side a number of small projections, and having the bottles of transparent blue glass. This will render them totally unlike any other bottle in use, and even in the dark they cannot be mistaken for another bottle. A leading firm—manufacturers of glassware—will soon be ready to supply these bottles to the trade, and I think they will be appreciated by pharmaceutists as a valuable addition to the dispensing department, and secure a corresponding appreciation from the public, as an effectual means of protecting them from accidental poisoning. The contrast of the bright red label on this singular shaped bottle is very conspicuous, and carries with it a caution which will not fail to arrest attention.—*Proceedings Amer. Pharm. Assoc.*, 1871.

PRESCRIPTIONS AND FORMULAS.

Rheumatic Ophthalmia. (Dr. — Power's Formula).

℞ Tr. aconiti rad .... min. xxiv.
Tr. colchici..... f. dr. ijss.
Aquæ camphoræ... f. oz. iv. M.
S. A tablespoonful three or four times a day.—*Georgia Medical Companion.*

For Infantile Eczema.

℞ Vini ferri,
Syrup tolutani, aa...f. oz. ss.
Liq. arsenicalis.....min. xii.
Aquæ anethi.....f. oz. i. M.
S. Teaspoonful to child two years old, three times a day, after meals. This is almost a specific.—*Erasmus Wilson.*

A Case of Calculus Nephritis.

Dr. Wm. M. Chambers, of Effingham, Illinois (*Chicago Medical Examiner*), reported a case of calculus nephritis in which recovery followed the subjoined treatment:

Externally, a blister; internally, with the following mixture:

℞ Potass. acetatis .... oz. ss.
Vini colchici..... oz ss.
Spts. nitrosi dulcis.. oz. ii.
Tinct. opii. camph.. oz. ss.
Fl. ex. belladonnæ... dr. i.
Aq. cinnamomi..... oz. ss. M.
Sig. One teaspoonful every three hours.

A calculus of phosphate of lime, weighing five grains, passed the urethra the day following.

Aperient and Alterative.

Useful in children suffering from dyspepsia, with offensive breath, acid eructations, sour evacuations and constipation:

℞ Sodæ bicarbonatis .. grs. xx.
Tr. rhei ..... f. drs. ij.
Infus. calumbæ,
Decoc. taraxaci.. aa f. dr. vii. M.
S. Two teaspoonfuls to be taken night and morning. For a child one year old. —*Georgia Medical Companion.*

Prescription for Softening of Bones in Children.

℞ Calcis phosphatis ... dr. ij.
Calcis carbonatis .... dr. i.
Sacch. lactis ..... dr. iij. M.
S. 10 or 20 grains two or three times a day in sweetened milk.—*Ibid.*

Periodical Headache. A New Method of Curative Treatment.

Extract from an article by F. Bradnack, M.D. (*Buffalo Medical and Surgical Journal.*)—In the proposed treatment of this disease, we of course adhere to general principles. If there exist complications, whether or no they be assumed to act as exciting causes, they should be removed, or, so far as possible, palliated. If there be constipation, the usual treatment for constipation is indicated. If examination reveals the existence of a uterine displacement, it should be remedied. If tobacco be used in excess, it must be either discontinued or used in moderation. Suppose the treatment to be commenced the day after an attack of headache. Assuming the non-existence of any important physical lesion, I find it advantageous, provided there are no contra-indications, to begin by the administration

at night of one or two of the following pills, which, during the entire course of treatment (say six months) may be given once in three weeks:

℞ Mass hyd.,
Ext. coloc. com.,
Pulv. aloes soc.....āā ʒj.
Pulv. Ipecac.....gr. vj.
Ft. pil., no xij. M.

This pill to be followed in the morning by one drachm of sulphate of magnesia.

As a permanent medicine I then prescribe three (3) drops of liquor potassæ arsenitis, to be taken in one (1) drachm of water after each meal, for certainly three, and usually six months, its use being suspended one day every three weeks when the above pill is taken.

If the patient be delicate, and complains much of coldness of the extremities during the attacks, and frequent chilliness during the intervals, the following prescription is substituted for the liquor potassæ arsenitis:

℞ Liq. arsenicalis hydrochlorici. ʒ ss.
Quiniæ disulphat..... gr. xij.
Liq. ferri perchloridi..... ʒ ij.
Aquæ..... fʒ vj.
M.

S. One tablespoonful in a wine-glassful of water, twice a day, after meals.

When an attack of headache begins I adopt the following plan, with minor modifications according to existing circumstances and complications. I direct the patient to sit in an easy-chair (avoiding the recumbent position, as tending to cerebral congestion by means of gravitation), and to place his or her feet in a hot bath of mustard water, the hands also in a similar hot bath, minus the mustard; and if it can be tolerated (though females frequently cannot tolerate it), a bag of pounded ice to be placed upon the head, covering as much as possible of the occipital region, and thereby bringing a decongestive influence to bear upon the cerebellum and the medulla oblongata. These accessory measures to be followed by a dose of the following medicine:

℞ Potassii bromid..... ʒ vj.
Ammon. bromid..... ʒ ij.
Potassii iodidi ..... gr. vj.
Infus calumbæ..... fʒ iiij. M.

S. One dessert-spoonful in an ounce of water.

One or two doses of this prescription will usually suffice either to very greatly palliate, or else entirely relieve the most distressing paroxysms.

Elixirs and Wines.

BY C. LEWIS DIEHL.

Elixir of Calisaya Bark.

The formula of this elixir I have already published in the *Am. Jour. of Pharm.*, vol. xl.; but I venture to repeat it, with such modifications in the technical directions as may have occurred to me during my manipulations since then.

Take of Calisaya bark..... ʒ xxiv.
Curaçoa orange-peel (ribbons), ʒ xvi.
Coriander..... ʒ iv.
Cardamom..... ʒ iss.
Cinnamon (Ceylon)..... ʒ iij.
Anise..... ʒ j.
Cocoa (Baker's) ..... ʒ viij.

Reduce to a moderately fine powder; displace with a mixture consisting of 1 part by measure of stronger alcohol and 3 parts of water; obtain two and a half gallons of percolate.

Meanwhile prepare, from six pints of solution of tersulph. of iron, hydrated sesquioxide of iron by the formula of the Pharmacopœia, measure it, and add to every four measures one measure of alcohol; then add of this sufficient to the percolate obtained as above, to deprive it of its cincho-tannic acid. The absence of the latter is readily ascertained by the addition of a drop of muriated tincture of iron to a filtered portion of the liquid in operation, which should not be colored by such addition. Should coloration result, the intensity or faintness will serve as a guide to the further quantity of hydrated sesquioxide of iron necessary to completely detannate the preparation. As soon as this result is obtained, strain

the mixture upon a muslin strainer; and when the liquid ceases to pass, wash the residue upon the strainer with sufficient of a mixture of one measure of stronger alcohol to three of water, to make the strained liquid measure five gallons. Now triturate together oil of orange (fresh), f. ʒss. (or solution, f. ʒv.; see further on); carbonate of magnesia, ʒvj. When thoroughly mixed incorporate it with the strained liquid obtained as above, agitate well, and filter through paper; express the filter between muslin, filter the expressed liquid, and mix with the previous filtrate, in which dissolve 15 lbs. of sugar. If necessary, filter the elixir thus obtained; but simple straining will usually answer.

Simple Elixir.

Take Oil of orange (fresh), f. ʒj.; or solution..... f. ʒx.
Oil of cinna., ♏x.; or solution..... ♏c.
Oil of anise, ♏iv.; or solution..... ♏xl.
Oil of bitter almonds, ♏. ij. or solution..... ♏xx.
Tinct. of cardamom..... f. ʒx.
Stronger alcohol..... ..... ϑ ij.

Dissolve the oils in the alcohol, add the tincture, and triturate the solution with a previously-powdered mixture of cocoa (Baker's), ʒj.; carb. magnesia, ʒij. Then add gradually four and a half pints of water, transfer the mixture to a one-gallon bottle, agitate occasionally for several hours, and filter; express the filter between muslin, filter the expressed liquid, mix with the previous filtrate, and dissolve it in 3 lb. av. of sugar; filter or strain, as may be necessary.

The simple elixir thus prepared has the color of dark Madeira wine, and an exceedingly pleasant taste. It serves as a vehicle for many medicines, disguising them to a great extent, and rendering them generally more palatable.

Wine of Orange.

Take Oil of orange (fresh), ♏v.; or solution... ..... ♏l.
Alcohol..... f. ʒss.
Carb. magnes..... ʒss.

Triturate together, and add syrup f. ʒij.; sherry wine, f. ʒxiij.ss.; mix thoroughly, and filter.

The wine obtained in this way has an agreeable flavor of orange. The use of carbonate of magnesia renders it neutral, and thus enables the introduction of medicinal compounds that are liable to decomposition in the presence of acids.

Solution of Essential Oils.

I have been in the habit of dissolving essential oils that are liable to change in alcohol, and have found these solutions very convenient for measuring minute quantities of oils. They are prepared by dissolving essential oil, 1 part (by measure), in alcohol fort., 9 parts; which strength is invariably meant when, in the formulas, I direct the use of solutions of essential oils.

Cochineal Color.

Take of Cochineal ..... ʒj.
Carb. potassa..... ʒss.
Powd. alum ..... ʒss.
Cream of tartar ..... ʒj.
Water..... ʒviij.

Reduce the cochineal to a fine powder, add the carbonate of potassa, and triturate with three ounces of the water. Allow the mixture to stand one hour, add the alum and cream of tartar successively, and, when effervescence has ceased, the remaining water; filter. This solution imparts to the elixirs a fine red color; but is in some respects unsatisfactory, as it soon spoils.

The above are all the preparations that need to be kept in stock; and with them, and such other ingredients as are readily obtained by purchase, almost all the elixirs and wines now prescribed may be prepared extemporaneously. The exceptions to these are:

Compound Elixir of Taraxacum,

which, being used for the purpose of

disguising the extreme bitterness of quinia, should be prepared according to the original formula of Mr. Candidus, as communicated by him to the American Pharmaceutical Association.

Elixir of Pyrophosphate of Iron, Quinia, and Strychnia

requires particular manipulation, which precludes the use of simple elixir. The following formula—the result of concert of experiments of my friend Mr. E. Scheffer and myself—has been used by me since autumn, 1869, and I can recommend it as uniformly successful when the manipulation is carefully conducted:

Take Sulphate of quinia	60 gr
Strychnia	1 gr.
Citric acid	5 gr.
Stronger Alcohol	f. ʒ iij
Solution of oil of orange	♏ l.
Syrup	f. ʒ vi.
Pyrophosphate of Iron	ʒ ss.
Distilled water	f. ʒ vij
Aquæ ammoniæ	q. s.

Triturate the sulphate of quinia, strychnia, and citric acid together until minutely divided, then add the alcohol and solution of oil of orange, warm the syrup slightly (to about 150° F.), and add to the turbid alcoholic mixture, when upon stirring the mixture becomes clear. To this add the pyrophosphate of iron previously dissolved in the distilled water, and finally aqua ammonia carefully (drop by drop), until the elixir is perfectly neutral to test paper; filter. The finished preparation has a greenish-yellow color, a pleasant flavor of orange, and is permanent.

Elixir of Calisaya Bark with Iron.

Take of pyrophosphate of iron 128 grains, soften in two ounces of water, and stir in gradually one pint of elixir of calisaya bark; filter.

Elixir of Calisaya Bark with Iron and Strychnia.

Dissolve one grain each of strychnia and of citric acid in two ounces of water; add one pint of elixir of calisaya bark with iron; mix and filter.

Elixir of Calisaya Bark with Iron and Bismuth.

Dissolve 128 grains of pyrophosphate of iron and 128 grains of ammonio-citrate of bismuth in two ounces of distilled water, add fourteen ounces of elixir of calisaya bark; mix and filter.

Elixir of Calisaya Bark with Iron, Bismuth, and Strychnia.

Dissolve one grain of sulphate of strychnia in two ounces of water, add one pint of elixir of calisaya bark with iron and bismuth; mix and filter.

Elixir of Calisaya Bark with Iron and Beef.

Dissolve one-half ounce of extract of beef (prepared by Liebig's method) in one pint of elixir of calisaya bark with iron; allow it to stand several days if possible, and filter.

Elixir of Pyrophosphate of Iron.

Soften 256 grains of pyrophosphate of iron in a half ounce of water, add fifteen and a half ounces of simple elixir; mix and filter.

Elixir of Bismuth.

Dissolve 256 grains of ammonio-citrate of bismuth in four ounces of distilled water; mix with twelve ounces of simple elixir, and filter.

Elixir of Valerianate of Ammonia.

Dissolve 256 grains of valerianate of ammonia in two ounces of simple elixir, carefully add aqua ammonia until the solution is exactly neutralized; then mix with fourteen ounces of simple elixir, filter, and color with cochineal color to a bright red.

Elixir of Valerianate of Ammonia and Quinia.

Triturate 64 grains of valerianate of quinia until minutely divided, then dissolve it in one pint of elixir of valerianate of ammonia, and filter.

Elixir of Valerianate of Ammonia, Quinia, and Strychnia.

Dissolve two grains of strychnia in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of elixir of valerianate of ammonia and quinia, and filter.

Elixir of Valerianate of Quinia.

Triturate 128 grains of the valerianate of quinia until minutely divided; mix with one pint of simple elixir; carefully add valerianic acid until the liquor becomes clear, shaking after each addition, and filter.

Elixir of Valerianate of Quinia and Strychnia.

Dissolve two grains of strychnia, minutely divided, in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of elixir of valerianate of quinia, and filter.

Elixir of Valerianate of Strychnia.

Dissolve three grains of strychnia in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of simple elixir, and filter.

Elixir of Bromide of Potassium.

Dissolve one ounce of bromide of potassium and one ounce of sugar in one pint of simple elixir; add twenty minims of solution of oil of orange, and ten minims of solution of oil of bitter almonds, and filter; color with cochineal color.

Elixir of Bromide of Sodium.

Prepare this like elixir of bromide of potassium, substituting bromide of sodium for bromide of potassium, and omitting the color.

Elixir of Bromide of Ammonium.

Prepare this like elixir of bromide of potassium, substituting bromide of ammonium for bromide of potassium, and omitting the color.

Elixir of Hops.

Add two and a half ounces of fluid extract of hops (prepared according to U. S. formula for f. e. gentian) to thirteen and a half ounces of simple elixir; mix and filter.

Elixir of Lupulin.

Triturate two ounces of fluid extract of lupulin with two ounces of carbonate of magnesia; add fourteen ounces of simple elixir, transfer to a bottle, agitate occasionally for several hours, and filter.

Elixir of Gentian and Pyrophosphate of Iron.

Triturate 100 minims of solution of oil of orange with two ounces of sugar; dissolve it in eight ounces of elixir of pyrophosphate of iron and six ounces of simple elixir; add one-half ounce of alcohol and one-half ounce of fluid extract of gentian; mix and filter.

Elixir of Chloral Hydrate.*

Dissolve two ounces of chloral hydrate in one pint of simple elixir, and filter.

Wine of Iron.

Dissolve 128 grains of ammonio-citrate of iron in two ounces of water; add one pint of wine of orange; mix and filter.

Bitter Wine of Iron.

Dissolve 128 grains of soluble citrate of iron and quinia in two ounces of water; add one pint of wine of orange; mix and filter.

Wine of Wild Cherry Bark.

Mix one ounce of fluid extract of wild cherry bark, two ounces of syrup of wild cherry bark, ten minims of solution of oil of bitter almonds, and thirteen ounces

* This elixir was first prepared by me at the request of a gentleman who habitually used the chloral hydrate, and he finds that the chloral dissolved in this way retains its virtues most completely during the period required for the consumption of one quart. For this reason I have given the formula for its preparation, thinking that if such a preparation is desirable this seems to serve the purpose.

of wine of orange. Allow to stand several days, and filter.

Wine of Wild Cherry Bark and Pyrophosphate of Iron.

Soften 128 grains of pyrophosphate of iron in two drachms of water; add one pint of wine of wild cherry bark; mix and filter.

Wine of Beef.

Dissolve half an ounce of extract of beef (prepared according to Liebig's method) in one pint of wine of orange, and filter.

Wine of Beef and Iron.

Dissolve half an ounce of extract of beef (Liebig's method) in one pint of wine of iron, and filter.—*American Practitioner*, April 1, 1872.

Glycerine Jelly.

1. Take pure glycerine and add powdered tragacanth to thicken, and perfume.

2. Take Transparent soap .....1 oz.
Water.....4 oz.
Inodorous glycerine.....24 oz.

(All by weight).

Dissolve the soap in the water by heat, adding an equal weight of glycerine. When dissolved, add the remaining portion of glycerine, and sufficient water to make up the weight. When nearly cool, add any suitable perfume, and pour in glass jars. It has a very pale amber color, is transparent, melts easily on the skin, and leaves no residue.—*Chemist and Druggist.*

Elixir of Bismuth.

BY C. H. WOOD.

Oxide of bismuth..	℥ ix.
Citric acid.....	℥ xvi.
Strong solution of ammonia, fl ℥ xij, or	q.s.
Water.....	q. s.

To prepare the oxide of bismuth, a pound of the sub-nitrate of commerce is boiled for five minutes in four pints of liquor potassæ, which must be free from carbonate. The oxide is easily washed by decantation, and must be dried at a moderate heat. It forms a dull lemon-yellow powder, having the formula $Bi_2 O_3$ ($Bi O_3$).

To prepare the solution, dissolve first eight ounces of the citric acid in four fluid ounces of water, and carefully neutralize with solution of ammonia (about seven fluid ounces) mixed with half its volume of water. Then add the remainder of the citric acid, and when it has dissolved introduce the oxide of bismuth. Heat the mixture to near its boiling point for fifteen minutes, with frequent stirring; then add a pint of water and sufficient ammonia to dissolve the citrate of bismuth, and render the liquid slightly alkaline. Finally make up the measure of one gallon, and filter through paper.—*London Pharmaceutical Journal.*

Glycerole of Tannin.

R. Rother, in the *Chicago Pharmaceutist*, commends the following formula:—

Take of Tannin.....	8 troy ounces.
Glycerine.....	4 " "
Strong alcohol....	8 fluid "
Water.....	8 " "

Mix the alcohol and water; add the tannin, and apply heat until the tannin has dissolved. Filter hot, then add the glycerine and evaporate by a careful heat until the solution weighs 16 troy ounces.

Macrotin.

Dr. J. M. Lewis, in the *Georgia Medical Companion* of March 1st, states that he has found the following formula exceedingly useful in all cases of atonic functional derangement of the uterus. He calls it a *uterine tonic*:—

℞—Macrotin.....	40 grains.
Ferri sulph.....60	grains.

M. et fiat mass, div. pil. No. 40.

S. One, two or three times a day.

Balsamic Cigarettes for Asthma, etc.

Soak strong unsized paper in a solution of saltpetre; this dry, and treat first with tincture of cascarilla, and afterwards, when nearly dry, with compound tincture of benzoin; cut into squares of a suitable size, and roll into the form of cigarettes.—*London Chemist and Druggist's Compendium.*

Compound Arsenical Paper.

Take of Belladonna leaves... grs. xcvj.
Hyoscyamus "
Stramonium "...āā grs. xlviij.
Ext. Opium..... grs. iv.
Tobacco..... grs. lxxx.
Boiling Water..... O.j.

Add

Potassæ nit..... grs. cxx.
Potass. arsenit..... grs. cccxx.

Take thick bibulous paper; soak it in this solution, and allow to dry. When set on fire and the flame extinguished, this paper burns slowly without flame, and emits a dense smoke which may be inhaled for the relief of asthma, often with very marked benefit. It is also useful in chronic bronchitis.—*Receipt Book of Philadelphia Hospital.*

Treatment of Facial and Dental Neuralgia.

This method consists in turning into the meatus auditorius from four to ten drops (according to the age and sensibility of the patient) of the following fluid; then to close the opening of the ear by means of a little cotton, and to cause the patient to hold the head inclined for some minutes to the side opposite to the seat of pain, so that the liquid may remain in the bottom of the ear. This preparation is thus made:—

℞.—Ext. opii,
Ext. belladonnæ,
Ext. stramonii..... āā parts j.
Aq. pruni virg..... " xij.
Solve et cola.

Although this preparation may be only extemporaneous, it may nevertheless be preserved, if care is taken to keep it cool, by pouring on its surface from two to four drops of sweet almond oil.

It is very rare, with the use of this liquid, that relief is not obtained in a few minutes, and the patient asleep in half an hour, whatever may have been the severity of the pains, and that without having been in the least danger. Absorption takes place almost as rapidly as from a denuded surface, and it is therefore unnecessary to blister the patient when we wish to use narcotics, since they act almost as rapidly by the auditory passage.

If it should happen that, at the end of eight or ten minutes, the pain does not yield to the remedy (which sometimes happens when the quantity used has been too small, or when we have to treat a neuralgia which has already required the use of narcotics in any way), it is necessary to use a second dose, at least equal to the first, but in the opposite ear, in order to obtain promptly that relief which is only too frequently momentary, of facial neuralgias of long standing.—*American Practitioner.*

Toothache.

The following formulas are commended by M. Magilot in *Lyon Médicale*, Jan., 1872:—

1. Take of Chloroform,
Sydenham's laudanum, āā 2 parts.
Tinct. benzoin..... 8 "
Mix.

2. Tincture of Aconite,
Liquor of Holland (C_4 H_4 C C_2) .....āā 2 parts.
Tincture of benzoin.... 8 "
Mix.

3. Take of Chloroform,
Creosote (or pure carbolic acid).
Sydenham's laudanum...āā 2 parts.
Tincture of benzoin ..... 8 "
Mix.

These preparations, dropped on cotton, are to be put in the cavity of the tooth.

No. 3 is decidedly the most active. The benzoin being precipitated by the saliva in the tooth, retains the active ingredients.

A mite of chloral put into the cavity and closely covered with a piece of white gutta-percha, or a pledget of cotton previously soaked in dammar varnish, is most efficient in toothache.

Treatment of Hemorrhoids of Pregnant Women.

Dr. Fordyce Barker, in *The American Practitioner*, recommends very highly aloes in hemorrhoids. He says: I give it, combined with other agents, according to the special indications of each case, and in such doses as I learn by experience of the peculiar idiosyncrasy of the individual is necessary to secure one easy, free, daily evacuation of the rectum. Some require a grain morning and evening, while in others a half grain is sufficient. In anæmic patients I combine the aloes with the sulphate of iron. In the two last weeks of gestation I always combine it with the extract of belladonna.* The following is a frequent prescription with me:

℞ Pulv. aloes soc.... } ää ʒ j.
Sapo. cast..... }
Ext. hyoscyami..... ʒ ss.
Pulv. ipecacuan..... gr. v.
M. Ft. pil. (argent.) No. 20.
S. One morning and evening.

When the patient is anæmic, I add to the above one scruple ferri sulphat. Some ten days or two weeks before the supposed time of labor, I substitute the extract of belladonna, ten grains to one scruple, for the extract of hyoscyamus. When the hemorrhoids are associated with an irritable rectum, and frequent, small, teasing, thin evacuations, I substitute for the hyoscyamus a small quantity of opium, giving a smaller quantity of the aloes, as in the following formula:

℞ Pulv. aloes soc..... }
Ext. opii aq..... } ää gr. x.
Sapo. cast..... .... }
M. Ft. pil. No. 20.
S. One morning and evening.

It is unnecessary for me to multiply formulæ, as the general principles by which I am guided will be sufficiently evident from the above.*

In some cases I have not been consulted, and have not known of the hemorrhoidal tendency of the patient until my attendance during labor. I have seen the hemorrhoidal tumors sometimes become very large during the labor. Dewees says: "Much may be done during labor to prevent a severe spell of piles by the accoucheur making a firm pressure upon the verge of the anus with the palm of his hand, guarded by a diaper, during the progress of the head through the external parts, and by carefully returning them after the expulsion of the placenta, as the sphincter is now fatigued, and will not oppose their descent." I have frequently tried this expedient, but I cannot say that it has been very successful, as the tumors soon come down again, and under these circumstances they are very apt to become strangulated, inflamed, and cause a great deal of suffering. When I find this condition of things, I have within a few years past adopted the plan of forcible dilatation, recommended by

* My friend and colleague, Prof. Wm. T. Lusk, has given me a memorandum from his note-book of the Clinical Lectures of the late Prof. Oppolzer, of Vienna, in 1868, which particularly struck him, as when a student he was familiar with my teaching on the subject. He says: "At the beginning of the hour Professor Oppolzer was wont to rapidly examine and prescribe for a large number of out-patients. Many of these were Polish Jews, drawn to Vienna by the great fame Oppolzer enjoyed in the treatment of hemorrhoids, an infirmity to which the Jews of that region, owing to sedentary habits, are specially liable. His prescriptions were, when piles are associated with constipation, aloes and quinine; without constipation, aloes and sulphate of iron. For bleeding piles:

℞. Ferri sulphat..... scru. i.
Ext. aloes aq..... dr. i.
Ext. taraxaci..... q. s.
Ft. pil. No. 60.
S. One morning and evening, and increase to three a day if necessary."

* I will also add the following sentence from Dr. Chambers's Restorative Medicine, page 58: "Take, for example, aloes. It is a purgative, evacuating effete tissue; but what a bracing effect it has upon the mucous membrane of the lower bowel, restraining its over-secretion of mucus, and restoring the elasticity of the congested blood-vessels."

my friend and colleague, Prof. Van Buren. My method is this: the patient being fully under the influence of chloroform, I select the moment after the delivery of the child and before the placenta is brought away. I push back the tumors within the sphincter, if I can readily; if not, I leave them alone, and introduce both thumbs, back to back, well in the sphincter, and opening them as wide as possible I draw them through the sphincter. During this time I have firm pressure made on the uterus by an assistant, and in several instances the operation was followed by the sudden expulsion of the placenta from the vagina. I direct the following ointment to be applied twice daily to the tumors, and well up in the rectum:

℞. Ung. gallæ co..... ℥ j.
Ext. opii aq..... ʒ j.
Sol. ferri persulph.. . 3 j.
M. Ft. ung.

The result has been in every instance that the tumors have gradually disappeared, and the patients have had very little suffering from the operation.

When hemorrhoids come on after labor, the suffering is generally much greater than when it occurs during pregnancy. They are very often induced by the action of the purgative given two or three days after confinement.

It is now many years since I have been convinced that castor-oil was one of the worst agents that could be used as a laxative when there is a tendency to piles, as in many instances I have seen its action develop them. For many years I have annually spoken of this to the medical class before whom I have lectured, and I have received many letters from former students corroborating my statement by their own observation.

In those who have, or are predisposed to have, hemorrhoids, I give the following on the second day after confinement:

℞. Magnesiæ sulph.... } ää ℥ ss.
Magnes. carb..... }
Potas. sup. tart.... }
Sulphur. sublim.... }

Mix thoroughly.

S. One, two, or three teaspoonfuls of the powder before eating in the morning.

Phosphate of Zinc.

Dr. J. Fred. Brown, of Dover, England, proposes in the *Pharmaceutical Journal*, the following formula:

Take of Sulphate of zinc..... 861 grains
Phosphate of sodium. 716 "
Acetate of sodium... 272 "
Boiling distilled water. 20 oz.

Dissolve the sulphate of zinc in four ounces of the water, and the phosphate and acetate of sodium in the remainder. Mix the two solutions, stir well together; let the precipitate subside; decant, and wash by decantation twice or thrice, then transfer to a paper filter, and wash with distilled water until the filtrate ceases to become turbid with a solution of chloride of barium; then dry on a water or sand-bath at a moderate heat. The product was a soft snow-white powder weighing 430 grains, 43 grains of which, when strongly heated in a porcelain crucible, were reduced to 35. The theoretical quantity of Zn_32PO_4 obtainable according to the subjoined equation is 385 grains; but the salt evidently retains three or four molecules of water when dried at a moderate heat, and their expulsion might be accompanied by decomposition of the phosphate into pyrophosphate—

$$3ZnSO_47H_2O+2Na_2HPO_4+2NaC_2H_3O_2 = Zn_32PO_4+3Na_2SO_4+2HC_2H_3O_2.$$

Phosphate of zinc resembles in composition ferrous phosphate, and the mode of preparation is the same; acetate of sodium being added in each case to prevent the liberation of sulphuric acid.

Blennorrhagic Orchitis.

Take of Crystallized nitrate of silver..... 1 part.
Distilled water.....100 parts.

Dissolve. Saturate and compress with this solution, and maintain it constantly applied to the affected testicle. Accord-

ing to Dr. Marc. Girard this application does not cause pain, but simply a feeling of warmth. In about twenty-four hours the pain of the orchitis disappears, and in six days generally the cure is complete.—*L'Union Medicale.*

Elixir Quiniæ Ferri et Strychniæ Phosphatis.

℞ Quiniæ	gr. xxx.
Ferri pyrophosphatis	gr. lx.
Strychniæ	gr. j.
Acidi citrici	gr. xxx.
Alcoholis	f ℥ ij.
Syrupi	f ℥ iss.
Aquæ aurant. flor.	f ℥ iss.
Glycerinæ	f ℥ ij.
Aquæ destill. q. s. ad.	f. ℥ viiss.
Aquæ ammon.	q. s.

Dissolve the iron in f. ℥ ss. of water; mix the syrup, glycerine, and orange-flower water, and add to the solution of iron; then add ℥ ss. of alcohol. Dissolve the quinia, with 5 gr. citric acid, in ℥ j. water and ℥ j. alcohol, by the aid of heat; then mix with the iron and syrup solution. Dissolve the strychnia in the remainder of the alcohol, and add to the other solution; then add the remainder of the citric acid, in powder, with enough liquid ammonia, until it becomes clear, using a little heat after the acid is added. The quinia solution must be of the same temperature as the iron when added, also with the others when added. This gives a beautiful straw-colored elixir, representing about 1 gr. sulphate of quinia, 1 gr. pyrophosphate of iron, and $\frac{1}{60}$th gr. strychnia in the fluid drachm.—Charles Shivers, jun., *American Journal of Pharmacy.*

Court Plasters.

SIMPLE COURT PLASTER, NO. I.

Take of Gelatin	32 parts.
Distilled water	200 "
Alcohol at 21°	100 "

Spread this solution upon silk, or better still upon *papier pelure*, variously colored, and hang the sheets up to dry.

HEMOSTATIC COURT PLASTER, NO. II.

Take of Gelatin	32 parts.
Distilled water	300 "
Tincture of chloride of iron	20 "

Spread this solution hot upon some Court Plaster No. 1; if simple paper or silk be used the perchloride will corrode it.

COURT PLASTER FOR BRUISES, NO. III.

Take of Gelatin	32 parts.
Distilled water	150 "
Tincture of arnica	200 "

Use the solution as in No. 1.—*Jour. du Pharm. de Bruxelles.*

Emmenagogue Formula.

BY DR. THEOPHILUS PARVIN.

A good emmenagogue pill in anæmic amenorrhœa is composed of equal parts of dried sulphate of iron, white turpentine, and aloes. The pill may weigh two or three grains, and may be given twice or thrice daily, regulating the frequency of repetition and the weight of the pill by the condition of the bowels.

Another efficient emmenagogue pill may be made of equal quantities of *rue*, *savine*, and *ergotine*, and half as much either of aloes or of gamboge. The pill may weigh from three to four grains, and two or three may be given three times a day. *Apiol*, the active principle of parsley, is not held in such high esteem in this country as it is in some parts of Europe; partly because it has been so little tried, but chiefly because that which is generally found in our drug-stores is either entirely factitious or else grossly adulterated. Undoubtedly this medicine is one of the safest and most certain of that very uncertain class medicines, called emmenagogues.

Faradization—the positive electrode passed into the uterine cavity, the negative applied to the hypogastrium—gives oftentimes a very prompt success in inducing a sanguineous discharge from the uterus; but in order that such result should follow, this means should be used only at a time when the other phenomena of menstruation manifest themselves, the flow only wanting.—*Am. Practitioner.*

GENERAL RECEIPTS.

Gilding and Silvering Silk.

ACCORDING to a formula published by Grüne, for silvering or gilding silk, the silk is to be soaked with a 5 per cent. solution of iodide of potassium, and dried; then (in non-actinic light) dipped in a 5 per cent. solution of nitrate of silver, containing a few drops of nitric acid, and well drained; next exposed for a few minutes to sunlight, and then dipped in a 2 per cent. solution of sulphate of iron. It immediately becomes gray, from reduction of metallic silver, and, after washing and drying, only requires burnishing in order to acquire the metallic lustre. By repeating this treatment, varied, however, by adding a little free iodine to the solution of iodide of potassium, the silver deposit becomes stronger. By laying the silvered silk in a very weak solution of chloride of gold, the silver becomes chloride, and gold is deposited; and by then removing the chloride of silver by a solution of hyposulphite of soda, washing, drying, and burnishing, the appearance of gilding is produced, if the deposit of metal be sufficiently thick. The purest chemicals must be used in order to secure satisfactory results.—*Harper's Monthly.*

Ink.

According to the *Chemical News*, the following formula yields a most superior, permanent ink:—

Take of Tannic acid,
Gallic acid.....āā grs. xx.
Dissolve in two fluid ounces of water.

Take also of Sulphate of iron (crystallized),
Dried sulphate of iron.....āā grs. xv.

And dissolve separately in two fluid ounces of water.

Mix the solutions, and add mucilage of gum arabic two and a half fluid drachms and oil of cloves two drops.

Colored Fires.

A member of the German artillery corps gives the following formulæ for making colored fires:—

1. White light: 8 parts saltpetre, 2 parts sulphur, 2 parts antimony.

2. Red light: 20 parts nitrate of strontia, 5 parts of chlorate of potash, 6¼ parts sulphur, 1 part charcoal.

3. Blue light: 9 parts chlorate of potash, 3 parts sulphur, 3 parts carbonate of copper.

4. Yellow light: 24 parts nitrate of soda, 8 parts antimony, 6 parts sulphur, 1 part charcoal.

5. Green light: 26 parts nitrate of baryta, 18 parts chlorate of potash, 10 parts sulphur.

6. Violet light: 4 parts nitrate of strontia, 9 parts chlorate of potash, 5 parts sulphur, 1 part carbonate of copper, 1 part calomel.—*Druggists' Circular.*

Canada Oil for Extracting Fats.

Dr. Vohl, of Cologne, continues to discuss the virtues of a form of petroleum which he calls Canadol (Canada oil), which he considers especially adapted to the extraction of fats of any kind from their original sources, and their conversion into articles for the table or for industrial purposes. The advantages of his method over that of cold and warm pressure he finds to consist both in

the much greater yield, and in the vastly improved quality, the residuum not being at all injured for use in other ways. The sulphide of carbon has frequently been employed by perfumers and others for extracting oily substances; but Dr. Vohl considers its use so greatly inferior to that of Canada oil as not really to come in competition with it. The butter can be extracted from the cacao-bean by this substance, thereby greatly improving the quality of the prepared cocoa.

Another application of the Canada oil is to the removal of the fat from bones, leaving them as white as if bleached for a long time, and perfectly adapted for use. Even the ivory of the elephant, the narwhal, and the walrus, can be greatly improved in quality by this application. Glue made from bones thus prepared is also a very superior article. An important application of this substance, if all that is claimed for it by Dr. Vohl be true, will be in the hands of the anatomist in preparing bones for skeletons. This, as is well known, generally involves the use of ether or other expensive agencies in removing the grease. The special application of the process, and the method of extracting oil from seeds, with the apparatus required, is given at length in a recent number of Dingler's *Polytechnic Journal.—Harper's Monthly.*

Silvering of Glass Plates and Globes.

According to Krippendorf, the silvering glass plates may be readily accomplished by the use of the following substances:—

1. Sodio-potassic tartrate; 2. A two per cent. solution of this salt; 3. Caustic ammonia; 4. Solution of silver nitrate, 1:8 (old silver bath will serve). From these the silvering and reducing liquids are prepared.

The reducing liquid is prepared by taking 900 cubic centimetres of distilled water, and 90 cubic centimetres of the solution of the tartrate, and, after mixing, boiling strongly together, and while the steam is issuing violently from the flask, dropping in 20 cubic centimetres of the silver solution, and boiling for another ten minutes. This solution not only keeps, but seems to improve by age. The liquid is to be filtered from the precipitated silver as it is wanted.

The silvering solution is prepared by taking 900 cubic centimetres of distilled water, and adding 80 cubic centimetres of the silver solution, and 100 drops of the ammonia solution, and filtering if necessary.

For silvering, equal volumes of the two solutions are to be carefully and separately filtered, and poured together into a flat glass dish to such a depth that the thoroughly cleansed plate shall be covered by a layer of at least one-tenth of an inch. Decomposition of the mixture takes place in ten minutes, and pure metallic silver is deposited on the plate, which is then washed, dried, and varnished. For the purpose of silvering the interior of glass globes, etc., it is sufficient to pour in successive small quantities of the mixture, turning the vessel continually, so as to keep the whole surface wet uniformly.—*Harper's Monthly.*

Process of Embalming.

Alcohol of 90 degrees, in which is dissolved a fiftieth part by weight of carbolic acid, is said to form the best liquid to inject for embalming. It penetrates the capillaries much better than when glycerine is employed as a solvent.—*Pacific Med. and Surg. Journal.*

Arsenious Acid and Albumen.

The preservation of albumen for manufacturing purposes is a problem of much interest, in view of the great use of this substance in the arts, one method consisting in the addition of a slight amount of arsenious acid, or arsenite of soda. The use of the former is, however, sometimes

inconvenient, on account of the great insolubility; and that of the latter is occasionally objectionable, on account of its alkaline action affecting the application of the albumen. For the purpose of obviating these objections, Paraf suggested the boiling of the arsenious acid with glycerine, in which it is quite soluble; after allowing the solution to cool, and to stand for twenty-four hours, a few drops may be added to the albumen. The same substance can be added to gum-arabic, paste, and other substances, to prevent fermentation, putrefaction, and the development of fungi. It will, of course, be understood that arsenic in this preparation is highly poisonous.—*Harper's Monthly.*

Transparent Green Varnish.

A beautiful transparent green varnish is made by taking a small quantity of "Chinese blue," with about twice the amount of finely-powdered chromate of potash, and stirring these in copal varnish thinned with turpentine. A thorough grinding of this mixture must be made for the purpose of intimately incorporating the ingredients, as otherwise it will not be transparent. A preponderance of chromate of potash gives a yellowish shade to the green, and a deficiency increases the amount of blue. This varnish, thus colored, produces a very striking effect in japanned goods, paper-hangings, etc., and can be made very cheaply.—*Harper's Monthly.*

Colored Cements.

A writer in *Comptes Rendus* states that colored cements which harden rapidly may be made as follows: He takes a solution of silicate of soda (sp. gr., 1.298) and adds to it, while stirring, first pulverized and previously washed, lixiviated chalk, so as to form a thick mass, like butter, to which are added, for coloring purposes, the following substances: Finely pulverized sulphuret of antimony for black, iron-filings for gray, zinc-dust for whitish gray, carbonate of copper for bright green, oxide of chromium for deep green, cobalt blue for blue, red lead for orange, vermilion for bright red, and carmine for a violet hue. This cement hardens within from six to eight hours, and may afterward be polished, becoming like marble.—*Druggists' Circular.*

White Gutta-percha.

The *Journal of Applied Chemistry* gives the following method of preparing this for dentists' use and for other purposes: Four ounces of pure gutta-percha are digested with five pounds of methyl-chloroform until the solution is thin enough to pass through filtering-paper. It is then filtered (an additional pound of chloroform will facilitate this), and should then be clear and nearly colorless. Alcohol is now added in sufficient quantity to precipitate the gutta-percha in a voluminous white mass, which is washed with alcohol, pressed in a cloth, and dried in the air. It must finally be boiled in water in a porcelain vessel for half an hour, and while still hot rolled into sticks. The chloroform can be separated from the alcohol by adding water, and the alcohol recovered by distillation.—*Druggists' Circular.*

Modification of the Ordinary Test for the Biliary Acids.

M. Strassburg, of Bremen, suggests (*The Practitioner*, February, 1872; from *Pflüger's Archiv für gesammte Physiologie*, Hefte x. and xi., 171) a modification of Pettenkofer's test for the presence of biliary acids in urine, which promises to be serviceable clinically, and, according to his statements, is of extreme delicacy, enabling a trace not exceeding $\frac{3}{100000}$ths to be readily detected. He dips a slip of filtering-paper into the urine suspected to contain the biliary acids, and to which a little cane-sugar has been previously added. The slip is withdrawn and dried; a drop or two of pure concen-

trated sulphuric acid is now applied to it by means of a glass rod. On holding the paper up to a strong light, a beautiful violet color makes its appearance.

To Relacker Brass.

The *English Mechanic* gives the following recipe: Strong sulphuric acid, two parts; water, one part; red fuming nitrous acid, one part. These must be mixed in the open air, as the gas evolved on mixing the nitrous acid with the vitriol and water is of a suffocating character; this will pass off in the course of an hour or so, during which time the mixture may be occasionally stirred with a glass rod. The bright gilded effect produced on the brass by this mixture is so good that any one trying it will not return to the use of nitric acid. The subsequent washing, drying, and lackering cannot be done too soon after the dipping, as the articles tarnish rapidly if kept unlackered.—*Boston Journal of Chemistry.*

To Protect Woollen Fabrics from Moths.

Dr. Vorwerk recommends the following mixtures for this purpose: (1) Pure carbolic acid, 45.0 grms.; camphor and oil of rosemary, each, 30 grms.; oil of cloves and aniline, each, 5 grms.; dissolve these substances in methylated spirit, 2.5 litres. (2) Pure carbolic acid, 20.0 grms.; camphor, oil of cloves, oil of lemon-rind (*Ol. citri cort.*), nitrobenzol, each, 10 grms.; aniline, 2.5 grms.; dissolve in methylated spirit, 1.5 litre. These fluids are applied to the fabrics and furs by the aid of the so-called spray-producers. The operation, if properly done, will only be required to be repeated twice or, at most, three times a year. Since these mixtures are inflammable, the operation with the spray-producers should be performed only by daylight. Neither goods nor colors are injured by exposure to the spray.—*Boston Journal of Chemistry.*

A Brilliant Stucco Whitewash.

Take clean lumps of well-burnt lime, slake in hot water in a small tub, and cover it to keep in the steam. It should then be passed through a fine sieve in a fluid form, to obtain the flower of lime. Add a quarter of a pound of whiting or burnt alum, two pounds of sugar, three pints of rice flour made into a thin and well-boiled paste, and one pound of glue dissolved over a slow fire. It is said to be more brilliant than plaster-of-Paris, and will last fifty years. It should be put on warm, with a paint-brush.—*Boston Journal of Chemistry.*

Dandruff.

A writer in the *Philadelphia Journal of Pharmacy*, after failure of all other means, tried the following: A preparation of 1 ounce of flowers of sulphur and 1 quart of water was made. The clear liquid was poured off, after the mixture had been repeatedly agitated during intervals of a few hours, and the head was saturated with this every morning. In a few weeks every trace of dandruff had disappeared, the hair became soft and glossy, and now, after a discontinuance of the treatment for eighteen months, there is no indication of the return of the disease.

Transparent Amandine.

Take of fine white honey 4 ounces, fine white soap 2 ounces; mix these well in a mortar, adding one ounce liquor potassæ, until the mixture becomes a perfect cream; rub in with caution and slowly 7 pounds of almond oil (sweet), and 1 oz. of essential oil of bitter almonds, adding to taste a sufficiency of oils of bergamot and cloves, and lastly, half a drachm of balsam of Peru.

Lavender Water.

The following is a superior preparation by Dr. Pereira: Oil of lavender (flowers)

3 drachms, oil of bergamot 3 drachms, oil of roses (ottar) 6 drops, oil of cloves 6 drops, musk 2 grains, oil of rosemary (best) 1 drachm, honey 1 ounce, benzoic acid 40 grains, rectified spirit 20 ounces, water 3 ounces.—*Boston Journal of Chemistry.*

Colors for Druggists' Show Bottles.

Amber.—Dragon's blood, in coarse powder, 1 part; oil of vitriol, 4 parts. When thoroughly dissolved, dilute with cold distilled water till the required tint is obtained. *Lilac.*—Dissolve oxide of cobalt in hydrochloric acid, adding sesquicarbonate of ammonia in excess, and afterwards sufficient ammonio-sulphate of copper to bring the desired color. *Orange.*—Dissolve bichromate of potash in water and add a little sulphuric acid. *Violet.*—Mix together solutions of nitrate of cobalt and sesquicarbonate of ammonia, adding a sufficiency of ammonio-sulphate of copper to strike the required color. *Blue.*—Take of solution of perchloride of iron 10 drops, yellow prussiate of potash 10 grains, oxalic acid 2 drachms, water 1 gallon. *Red.*—Solution of perchloride of iron 10 drops, sulphocyanide of potassium 10 grains, water 1 gallon. *Crimson.*—Iodine and iodide of potash, of each 30 grains, hydrochloric acid 1 drachm, water 1 gallon. *Green.*—Sulphate of copper 1 drachm, bichromate of potash 30 grains, strong liquor of ammonia 2 ounces, water 1 gallon.—*Boston Journal of Chemistry.*

Bandoline.

1. Take of Carrageen or Irish moss,
   Water, of each any quantity to make, when boiled, a thick solution; strain through muslin, and when nearly cold add to each pint—
   Alcohol, } of each one fluid
   Cologne water, } ounce.
   Oil of cloves .....8 drops.

After mixing the whole thoroughly, keep it in a corked bottle in a cool place.

2. Take of Quince seed..2 or 3 drachms.
   Water .....1 pint.

Add the alcohol, spirit, and oil of cloves as directed in No. 1.

3. Take Gum arabic (clean) ...2 ounces.
   Rose-water.....6 ounces.

Dissolve and add of Tincture of Cochineal q. s. to color.

4. Take Gum tragacanth....1½ drachm.
   Water .....8 ounces.
   Alcohol .....3 ounces.
   Ottar of Roses....10 drops.

Macerate for twenty-four hours and strain.

5. Take Castor-oil.....2 ounces.
   Spermaceti .....1 drachm.
   Annotto .....½ drachm.
   Oil of bergamot ... 1 drachm.
   Ottar of roses.....5 drops.

Mix with heat and strain.

6. Take Oil of Almonds ....1 ounce.
   White wax.....1 drachm.
   Tincture of mastic..3 drachms.
   Oil of bergamot....1 drachm.

Melt the wax in the oil with heat, and add the tincture of mastic and the perfume.—*Drug. Circular.*

Shaving Cream.

Take Naples soap (genuine) ...4 ounces.
Castile soap (powdered)..2 ounces.
Honey.....1 ounce.
Ess. of ambergris .....5 drops.
Oil of cassia .....5 drops.
Oil of nutmegs.....5 drops.

Mix.—Another formula is the following:

Take White wax.....¼ ounce.
Spermaceti .....¼ ounce.
Almond oil .....¼ ounce.

Melt, and whilst warm beat in
Windsor soap .....2 squares,
previously reduced to a paste with
Rose water.....q. s.
—*Druggists' Circular.*

Shaving Soap.

Melt seven pounds of clarified lard in a porcelain vessel by a salt-water bath or by steam heat under fifteen pounds pres-

sure; then run in three and three-quarter pounds of potash-lye, containing twenty-six p. c. of the alkali, very slowly, agitating the whole time. When about half the lye is in the mixture begins to curdle; it will, however, at last become so firm that it cannot be stirred. The cream is then finished, but is not pearly. It will assume that appearance by long trituration in a mortar, gradually adding three ounces of alcohol, in which have been dissolved two drachms of essential oil of almonds.—*Druggists' Circular.*

Liquid Shampoo.

Take Bay rum ..... 2½ pints.
Water ..... ½ pint.
Glycerine ..... 1 ounce.
Tinct. of cantharides ... 2 drachms.
Carbonate of ammonia . 2 drachms.
Borax ..... ½ ounce.

Dissolve the salts in the water and add the other constituents gradually.—*Druggists' Circular.*

Verbena Water.

A good article may be made in the following way:—

Take Rectified spirit ..... 1 pint.
Grass-oil (verbena-oil) . . 3 drachms.
Oil of lemon-peel ..... 2 ounces.
Oil of orange-peel ..... ½ ounce.

Mix; let it stand a few hours, filter if necessary, and fill in bottles. A very much superior article, also sold in commerce under the name of *Extrait de Verbène*, is made according to the following recipe:—

Take Rectified spirit ..... 1 pint.
Oil of orange-peel .... 1 ounce.
Oil of lemon-peel ..... 2 ounces.
Oil of lemon ..... 1 drachm.
Grass-oil (verbena-oil) . 2½ drachms.
Essence of orange-flowers ..... 7 ounces.
Essence of tuberose ... 7 ounces.
Essence of rose ..... ½ pint.

—*Druggists' Circular.*

An Excellent Varnish for Harness.

Procure at the druggist's or apothecary's store half a pound or a pound of gum-shellac, according to the quantity desired; break the scales fine, and put them in a jug or bottle; add good alcohol sufficient to cover the gum; cork tightly, and place the jug where it will be kept warm. In about two days, if the bottle or jug is shaken frequently, the gum will be dissolved and ready for use. If the liquid appears as thick as thin molasses, add more alcohol. To one quart of the varnish add one ounce of good lampblack and an ounce of gum camphor. Such varnish will not render leather hard; but it will keep the harness from becoming soaked with water, and it will keep the surface clean and neat for a long time. A coat of such varnish will effectually prevent the oil in the leather from soiling one's hands. Nothing is better to render a farmer's boots waterproof than an occasional coat of this leather-varnish. —*Druggists' Circular.*

Paraffined Paper.

Dr. W. R. McNab recommends in the *Medical Times and Gazette* paraffined paper as a cheap and light covering for dressings. It is prepared by first saturating a thin sheet of paper with an excess of paraffin, and afterwards removing the excess by placing the sheet between blotting-paper, and passing a hot iron over the whole.

To Stop Pin-Holes in Lead.

Pin-holes in lead water-pipes can be stopped by placing the square end of a tenpenny nail on the hole, and hitting it two or three light blows with a hammer.—*Trade Journal.*

To Distinguish Artificial Fruit Syrups.

It appears that a considerable trade is carried on in fruit syrups, which on the

lucus a non lucendo principle, contain no fruit whatever, but are artificially prepared from solutions of sugar, flavored with ether and colored with aniline dye. There are fortunately various tests for this disgraceful imposture—such as nitric acid, which, when mixed in equal volume with real fruit syrup, causes no change, but turns the imitation yellow. With solution of carbonate of soda, the artificial remains unchanged, and the real becomes lilac or green, so that the preventives against making our interior an ethereal dye-house are easily obtained and put in force.—*Food Journal.*

Concentrated Emulsion of Almonds (M. Reynolds).

Take of—

Blanched sweet almonds,	
Sugar,	
Glycerine, each	30 parts.
Powdered gum arabic	4 "
Water	60 "

Reduce to a uniform paste, strain and evaporate at a temperature not exceeding 60° F. to the condition of a nearly solid extract. In order to prepare at any time, from this concentrated emulsion, the ordinary almond emulsion, add to two drachms of it enough simple water, or (more elegant) water of orange-flowers, to make an ounce of fluid.—*Journal de Pharm. et de Chim.*, April, 1872.

Brown Water of Dr. Warlomont.

Take of—

Borax	10 parts.
Extract of hyoscyamus	5 "
Decoction of mallow roots	180 "

Mix.

Employed in ulcerative keratitis, catarrhal ophthalmia, and other acute affections of the eyes. To apply it, a compress should be wet with it (after shaking) and firmly bound on the eye. The compress should be kept wet for half an hour and then removed for two hours, at the end of which time it should be reapplied as before.—*Ibid.*

To Develop the Color of Chlorine Gas at Night.

Place a sheet of white paper behind the jar and burn magnesium, so that its light will fall fully upon it.—*Chemical News.*

Fumigating Pastilles (French Codex).

Take of Gum benzoin . . . . . 4 parts.

Balsam of tolu	1 "
Santalum album	1 "
Light wood charcoal	25 "
Nitrate of potash	2 "
Mucilage of tragacanth	q. s.

Powder and mix together with the mucilage into a firm paste, and divide into cones three centimetres high.

Cosmetique d'Alibert.

Take of almond soap . . . 6 parts.

Cucumber pomade, or cocoa butter	45 "
Rose water or water of cherry-laurel	500 "

Dissolve the soap in a little of the water, mix the fatty matter with it, and add, little by little, the remaining water.

A hygienic cosmetic for softening and benefiting the skin. Its application should be followed by free washing with cold water.—*Jeannel's Formulaire.*

Pommade Divine (Piesse).

Take of Spermaceti . . . . . 125 parts.

Washed lard	250 "
Almond oil	375 "
Powdered benzoin	125 "
Sliced vanilla bean	42 "

Digest in a water bath for six hours and then decant.—*Ibid.*

Artificial Powder of Violets.

Take of Starch . . . . . 600 parts.

Powder orris-root	100 "
Flowers of Acacia farnesiana	10 "
Powdered cloves	1 "

Mix.—*Ibid.*

Cement to Resist Sulphuric Acid.

Take caoutchouc; melt this by a gentle heat, add from six to eight per cent. of the weight of tallow, taking care to keep the mass well stirred; add dry slaked lime, so as to make the fluid mass the consistency of soft paste; and lastly, add twenty per cent. of red lead, whereby the mass, which otherwise remains soft, becomes hard and dry. This cement resists boiling sulphuric acid. A solution of caoutchouc, in twice its weight of raw linseed oil, aided by heating, and the addition thereto of an equal weight of pipe-clay, yields a plastic mass which also resists most acids.—*Boston Journal of Chemistry.*

Pommade.

Take of Huile philocome,

Beef marrow	10 parts.
Oil of almonds	10 "
Oil of corylus avellanna	10 "

Melt at a mild heat and perfume to taste.—*Jeannel's Formulaire.*

Carrotine for Coloring Butter.

A writer in *Dingler's Polytechnisches Journal* (cc. 83) recommends carrotine, the coloring matter of carrots, obtained by exhausting the dried and pulverized roots with bisulphide of carbon, as better adapted for coloring butter than annatto, the carrotine being tasteless and scentless.

Polish for Patent Leather.

The following is from Cooley:—

Whites of two eggs.
One tablespoonful of spirits of wine.
Two large lumps of sugar.
Finely-powdered ivory-black,

as much as may be sufficient to produce the necessary blackness and consistence. To be laid on with a soft sponge lightly, and afterwards gently rubbed with a soft cloth.—*Chemist and Druggist.*

Incense.

Sandal wood in powder	1 lb.
Vitivert	2 oz.
Cascarilla bark	½ lb.
Gum benzoin	½ lb.
Grain musk	½ oz.
Powdered nitre	2½ oz.

—*Ure's Dictionary of Arts.*

Pommade Cosmetique.

Take of Beef's marrow,

Beef suet, each	15 parts.
Oil of almonds	4 "
Balsam of Peru	2 "
Cut vanilla bean	1 "

Heat by means of a water bath for one hour; strain and rub up in a mortar till completely cold.—*Jeannel's Formulaire.*

Syrup of Coffee.

This preparation is of great use to those who have long journeys to make. Take ½ lb. of the best ground coffee; put it into a saucepan, containing three pints of water, and boil it down to one pint. Cool the liquor, put it into another saucepan, well scoured, and boil again. As it boils, add white sugar enough to give it the consistency of syrup. Take it from the fire, and when it is cold put it into a bottle, and seal. When travelling, if you wish for a cup of good coffee, you have only to put two teaspoonfuls of the syrup into an ordinary coffee-pot, and fill with boiling water. Add milk to taste, if you can get it.—*Food Journal.*

A la Vinaigrette.

This is a sauce much used in Paris for cold viands; and in a country like England, where, amongst the middle and lower classes, suppers are an institution, and cold joints, etc., often an incubus—as certain linendrapers say of their old stock—a few words about it may be acceptable. Sauce *à la vinaigrette* is composed of salad oil, vinegar, finely-chopped parsley, and shallots, onions, or chives, with pepper and salt to taste. For those who have no objection to oil, this sauce is infinitely superior to mere vinegar, pepper, and salt. It is suitable for any kind of cold meat, and especially for cold

calves' head, and is admirable with cold salmon, turbot, or indeed any sort of cold fish. Hard-boiled eggs also eat extremely well with sauce *à la vinaigrette;* so do many kinds of cold vegetables, and especially asparagus: in fact, this is quite as often eaten cold as hot in Paris, and always *à la vinaigrette.* Cold artichokes are also very largely consumed with this sauce. When used with cold meat, and particularly with calves' head, the addition of a few capers to the sauce is a great improvement; and with cold roast meat a ghirkin, cut up fine, is excellent. As this is a sauce produced almost entirely out of the cruet-stand, it suits well with our English habits. You rub up the salt and pepper with a little vinegar, then add as much oil as you please, with chopped parsley, shallot, ghirkin, or capers, according to convenience or taste.—*Food Journal.*

Test for Sulphur in Coal Gas.

A bead of carbonate of soda is formed on a fine platinum wire and passed along the edge of the gas flame. The sulphides and sulphites formed are then placed in the illuminating flame, where sulphide of sodium alone will remain unreduced. The bead is then crushed on a porcelain plate, and a drop of a solution of *nitro-prusside of sodium* placed upon it. The slightest trace of sulphur will be indicated by a beautiful violet color, a reaction fifty times more delicate than that with silver foil.—*Jour. Applied Chemistry.*

Thawing Frozen Ground.

The *Scientific American* contains a notice in regard to thawing frozen ground in winter for purposes of excavation. The writer claims to have ascertained that a small jet of steam, applied under ground, will remove the frost in a short time from a very large extent of earth. This is done by forcing steam, under pressure from a boiler, under the earth in a suitable pipe; and as the fluid escapes it penetrates the soil, is condensed, and parting with its latent heat, thaws out the ground as indicated.—*Harper's Monthly.*

Fire Kindlings.

In France a very convenient and economical kindling is made by dipping corn-cobs for about one minute in a bath composed of 60 parts melted resin and 40 parts tar. They are next spread out to dry on metallic plates, heated to the temperature of boiling water. They are then assorted, according to size, and tied up in bundles. They sell for one to two centimes (half cent) apiece. The "Compagnie des allumettes landaise" employs thirty workmen, and makes about $40,000 worth a year.—*Richmond & Louisville Journal.*

Remedy for Catarrh.

A correspondent of *The Chemist & Druggist* writes as follows of a remedy used in Germany for catarrh. It is prepared in the following manner: A wide-mouth glass-stoppered bottle is filled with amianth, or better with cotton, and then the following mixture is poured on, so that the cotton or amianth is perfectly saturated with it:—

Acid. carbolic puriss.... 5.0 (℈iv.)
Liq. Ammon. caustic... 6.0 (℥iss.)
(spec. gravity 0.960.)
Aquæ destillat..... 10.0 (℥ij., ℈ij.)
Spirit. Vini. rectificatiss.... (℈iv.)

The vapors are drawn into the nose frequently during the day, and now and then inhaled into the mouth. A medical gentleman of Stettin, who is renowned not only for his skill as a physician, but likewise for the tremendous catarrh that troubles him regularly every winter, has used this olfactorium anticatarrhoicum with perfect success on his own person, and afterwards on many of his patients, and recommends it highly.

Culture of Tea Plant.

Mr. Routsey says in the *Bristol Journal* (England): "Having found the Chinese green tea plant (*Camelia viridis*) to be

more hardy than some other shrubs which endure the open air in this neighborhood, I have tried it upon the Welsh mountains, and found it succeed. I planted it in a part of Breconshire, not far from the source of the Usk, about 1,000 ft. above the level of the sea, and higher than the limits of the native woods—consisting of alder and birch. It endured the last winter, and was not affected by the frost of May. It has now made several vigorous shoots, and I have no doubt of its thriving very well."

Distillation of Potatoes.

M. Zetterland says that in mashing potatoes for distillation he found that, in using sulphurous instead of acetic acid or sulphur, he obtained a larger proportion of alcohol, the fermentation was more complete, and there was less residual acid in the mash.—*Food Journal.*

Bouillon Cakes.

Bouillon cakes, according to M. Reinsch, are made as follows:—Lean beef or veal is cut into thin slices. These are spread on a sieve and dried in hot air at a temperature of 100° C. After awhile they are dry enough for pounding in a mortar, where the necessary quantity of salt is added. The preparation is next roasted with flour, etc., in the proportion of 11 of fat to 20 of flour, 64 of beef, and 4 of salt. The cakes are packed in tin boxes.—*Food Journal.*

Improved Soap Bubbles.

We find in an exchange a paragraph which teaches the art of blowing soap-bubbles that will show the changing colors of the rainbow. The directions are as follows: Take three-quarters of a pint of water that has been boiled and become cold, and put into it a quarter of an ounce of Castile soap, cut up fine. Put this into a pint bottle, and set it in hot water, in a saucepan, on the fire; there let it remain an hour or so, now and then giving it a good shaking, till the soap is dissolved. Let the fluid stand quiet for the impurities and coloring matter of the soap to settle, then pour off the fluid and add to it four ounces of glycerine, and your soap-bubble solution is ready. In an ordinary way you may blow the bubbles easy with a tobacco-pipe, but if you wish to attain scientific perfection, you had better employ a glass pipe. By adding a larger quantity of the glycerine, you may make these bubbles so strong that you can play battledore with them.—*Jour. Applied Chemistry.*

To detect Sulphuric Acid in Vinegar.

The salts of barium are far too delicate a test for free sulphuric acid in vinegar. When it is made by the oxidation of alcohol, the water used for diluting the spirits, in many localities, contains sufficient sulphate of lime or other sulphates, to give a decided reaction with chloride barium; and if the vinegar be made from cider, it will generally give evidence of the presence of a sulphate with this test, even when the sample is pure and free from the usual adulteration.

The following process will detect the five-hundredth part of free sulphuric acid, and is sufficiently accurate for all practical purposes.

An ounce of the vinegar to be examined is put into a small porcelain capsule, over a water-bath, and evaporated to about half a drachm, or to the consistence of a thin extract; when cool, half a fluid ounce of stronger alcohol is added and thoroughly triturated. The free sulphuric acid, if present, will be taken up by the alcohol to the exclusion of any sulphates.

Allow the alcoholic solution to stand several hours, and filter; to the filtrate add one fluid ounce of distilled water, and evaporate the alcohol off by gentle heat, over a sand-bath; when free from alcohol it is set aside for several hours and then again filtered.

To the filtrate, acidulated with hydro-

chloric acid, add a few drops of a solution of chloride barium, and a white precipitate of sulphate of barium will result, if the sample of vinegar has been adulterated with sulphuric acid.—*Amer. Journal of Pharmacy*, April, 1872.

To Remove Paint from Stone.

A correspondent of the London *Builder*, having to clean a pulpit and sedilia in which the carving and tracery were almost filled up with successive coats of paint, was informed that common washing soda, dissolved in boiling water, and applied hot, would remove it. He says: "I found that 3 lbs. of soda (cost 2½d.) to a gallon of water, laid on with a common paint-brush, answered the purpose admirably, softening the paint in a short time, so that it was easily removed with a stiff scrubbing-brush; afterward, on adding a few ounces of potash to the solution, it softened more readily than with soda only. The stone in both cases was a fine freestone."—*Louisville Journal.*

Cheap Mode of Preparing Pure Dextrine.

Five hundred parts of potato-starch are mixed with 1,500 parts of cold distilled water and 8 parts of pure oxalic acid, and this mixture placed in a suitable vessel on a water-bath, and heated until a small sample tested with iodine solution does not produce the reaction of starch. When this is found to be the case the vessel is immediately removed from the water-bath, and the liquid neutralized with pure carbonate of lime. After having been left standing for a couple of days the liquor is filtered, and the filtrate evaporated upon a water-bath until the mass has become quite a paste, which is removed by a spatula, and, having been made into a thin cake, is placed upon paper and further dried in a warm plate; 220 parts of pure dextrine are thus obtained.—*Louisville Journal.*

Paste that will Keep a Year.

Dissolve a teaspoonful of alum in a quart of warm water. When cold stir in as much flour as will give it the consistency of thick cream, being particular to beat up all the lumps; stir in as much powdered resin as will lay on a dime, and throw in half a dozen cloves to give a pleasant odor. Have on the fire a tea cup of boiling water, pour the flour mixture into it, stirring well all the time. In a very few minutes it will be the consistency of mush. Pour it into an earthen or china vessel; let it cool; lay a cover on, and put in a cool place. When needed for use, take out a portion and soften it with warm water. Paste thus made will last twelve months. It is better than gum, as it does not gloss the paper, and can be written on.—*Journ. Applied Chemistry.*

Furniture Oil.

Take four ounces of bruised alkanet root and one gallon of linseed oil; boil together in a glazed pipkin until the color is extracted from the alkanet; cool and strain for use.—*Physician & Pharmacist.*

Blue Ink.

Oxalic acid, one drachm; distilled water, six drachms; best Prussian blue, six drachms; rub the latter with the solution of acid to a thick paste, and add two ounces of pulverized gum arabic, and one quart of soft water. Let it stand to settle for 24 hours, and pour off the clear portion for use.—*Physician & Pharmacist.*

To remove Fruit or Acid Stains from Carpets.

Dissolve one ounce of carbonate of ammonia in one quart of warm rain-water, and carefully apply to the stains with a sponge.—*Physician & Pharmacist.*

BIBLIOGRAPHY.

INJURIES OF THE NERVES AND THEIR CONSEQUENCES. By DR. S. WEIR MITCHELL. Philadelphia: J. B. Lippincott & Co.

THIS monograph of Dr. Mitchell is not only a most valuable and original contribution to neural pathology and therapeutics, but is also a complete treatise on the subject of which it treats.

It is based upon the extraordinary experience afforded by a special governmental hospital during a gigantic war, as well as by a large and more or less special private practice. The subject is of course rather restricted, but yet touches some of the most interesting and curious problems of physiology as yet unsolved, whilst the results of nerve injuries are so grave, although rare, as to claim the attention of every general practitioner.

The matter has been handled by Dr. Mitchell in a masterly manner, so that the work is worthy of the high reputation of the author; clear, concise, and yet full, it covers the ground most excellently.

The well-known firm of publishers has done its work well, giving a comely dress to the author's creation.

A PRACTICAL TREATISE ON DISEASES OF WOMEN. By T. GAILLARD THOMAS. Third Edition. Philadelphia: H. C. Lea, 1872.

ALTHOUGH gynæcology has long since been raised to a first rank among specialties, yet its close connection with obstetrics, the great frequency of the diseases it deals with, as well as the clinical and pecuniary interest surrounding it, will always cause it to be looked on with great favor by the general practitioner, and to afford no mean portion of his daily work. It is to such practitioners we conceive the work of Dr. Thomas is especially directed, certainly it is their needs that it in a remarkable manner meets. In the universality of its scope, in its clear, systematic method, and in its practical teachings, it has long seemed to us to offer to the doctor, who has no time to wade through the immense literature of the specialty, the most useful and reliable guide in the language.

The present edition is a decided improvement on the book as it first appeared, being more full and exhaustive, and taking more cognizance of the work of European co-laborers.

The style is clear and simple, the print open and most excellent, so that we doubt not many more editions will hereafter attest the popularity and usefulness of the book. The greatest fault we can find with the work is its author's apparent want of acquaintance with the German literature of the subject.

THE PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF THE BROMIDE OF POTASSIUM. By EDWARD H. CLARKE, M.D., and ROBERT AMORY, M.D. Boston: James Campbell, 1872.

THIS monograph is divided into two parts, the first and longer portion of which, by

Dr. Clarke, treats the drug from the stand-point of the clinician. This is a somewhat elaborate discussion, but appears to be chiefly the record of the writer's own experience. As such it is a valuable contribution to original literature, and the whole subject is sufficiently worked up for the wants of the ordinary therapeutist. Perhaps the sentences are at times a little slip-shod, and give the impression of having been hurriedly written; but the general style is clear and the matter good. Dr. Clarke states that his experience is very positive, that in sleeplessness, dependent upon cephalic anæmia, the bromides do harm rather than good.

Dr. Amory contributes a series of experiments made by himself in support of five propositions. The first of these asserts rapid absorption from mucous membranes; the second, principal elimination by the urine; the third, partial elimination by the skin. The experiments supporting these propositions are laborious, exact, and conclusive.

The last two propositions express the belief that the action of the bromide upon the nervous system is due to its causing contraction of the capillaries and consequent "oligæmia of the nerve centres."

This may be so, but Dr. Amory certainly fails to prove it; for even allowing that he establishes the asserted contraction, he in no way establishes the dependence of the loss of reflex excitability upon such contraction. Coexistence is not causation.

We regret that want of space forbids a longer review of this brochure, but we must content ourselves with recommending our readers to examine the work for themselves.

LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC. By Sir THOMAS WATSON, BART, M.D., F.R.S. Edited by DR. H. HARTSHORNE, from the fifth revised and enlarged English edition. Philadelphia: H. C. Lee, 1872.

THE flowing periods of Sir Thomas Watson have been too long before the public to need any comment here. The present edition appears to be well abreast of the times. When it is remembered that the original draft of the work was made in 1836 and 1837, and that to Dr. George Johnson and Dr. Hartshorne, as well as to the now aged author, much of the present form is due, it is not surprising that occasionally, during the perusal of the work, the scriptural adage about putting new wine into old bottles will come into the memory.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. By J. LEWIS SMITH, M.D. Second Edition. Philadelphia: H. C. Lea, 1872.

THE immense clinical material embraced in the various city hospitals of New York, with most of which Dr. Smith is connected, has afforded to him most excellent opportunities for the study of the disease. The result has not been so much a brilliant record of new observations and theories, but rather a sound practical treatise. We notice, however, too close attachment to, and belief in, beef-essence and beef-tea to suit our own judgment. The statement (p. 719) that beef-extract "contains, unchanged, nearly all the nutritive principles of the beef," is certainly incorrect.

In the section on thread worms we are somewhat astonished to see that quassia is not mentioned as a remedy. A strong infusion of this drug offers probably the most effectual and safest injection that can be used against these little pests. The use of arsenite of soda in solution, or of blue ointment dissolved in oil and thrown into the rectum, seems utterly unnecessary and, therefore, unjustifiable, even though recommended by a Trousseau or a Bouchut.

The book is of some 700 pages in length, and is therefore not so exhaustive and ponderous as the treatise of Meigs and Pepper, but is sufficiently full for a practical guide.

NEW REMEDIES.

THERAPEUTICS.

ON THE INFLUENCE OF PHOSPHORUS UPON THE ORGANISM.

. Dr. George Wegner (Virchow's first assistant) has an elaborate paper upon this subject in Virchow's *Archives* of June 22. The first portion is devoted to a brief discussion of acute phosphorus poisoning, in which nothing new is developed, unless it is that the whole arterial system down to the microscopic arterioles is affected equally with the central organ, the heart, by the fatty degeneration that follows the ingestion of a lethal dose of the poison, and as a result of this, excessive uterine hemorrhage occurs in menstruating subjects, with also hemorrhage in the ovaries. Dr. Wegner then discusses our knowledge of chronic phosphorus poisoning, which rests chiefly upon the monograph of Von Bibra (Die Krankheiten der Arbeiter in den Phosphorzündholz-Fabriken. Erlangen, 1847). Von Bibra fed rabbits for months with phosphorus, but without satisfactory results, as nothing definite was developed.

As is well known, the usual recognized symptoms of chronic poisoning is necrosis of the jaw; but in January, 1871, the following case came under Dr. Wegner's notice:—

A fringe-maker, 18 years old, had received a severe contused laceration of the right leg, from a wagon-wheel. The patient, until a short

time previous, had worked from his fourth year in a match-factory, without showing, however, any indications of suffering from the phosphorus. Whilst the wounds were granulating there came on hospital gangrene, and after this was cured by the use of strong caustics, there were developed high fever and gangrenous periostitis of the tibia, which bared the bone to the knee-joint. Finally amputation through the thigh was performed, and at the operation it was noticed that the periosteum, although normal in appearance and thickness, was but slightly adherent to the bone. Afterwards it separated from the femur clear to the trochanter minor, so that there was left six inches of dead bone, and the patient finally died of hectic exhaustion.

At the *post mortem* there were found gangrenous periostitis of the lower third of the amputated femur, with commencing central and cortical necrosis, putrid osteomyelitis, metastatic infarctions of lungs, kidneys, liver, spleen, and muscles, phlebitis, etc. After maceration there was revealed hyperostosis of the skull, slight ossifying periostitis of the alveolar edges of both jaws, with the teeth intact, and more pronounced osteoporotic layers upon the epi- and apo-physes of the extremities.

This case caused Dr. Wegner to experimentally study the subject, and as the effects of the phosphorus fall chiefly upon the digestive system and the bones, his results are told under two heads.

Influence of phosphorus on the digestive system.

If a rabbit be fed upon gradually increasing doses of phosphorus, or exposed to air loaded with its vapor, there is, after some weeks or months, under proper regulation of the amount ingested, developed a hyperæmia of the mucous membrane of the stomach with hemorrhagic infarctions, and finally the membrane becomes three times as thick as normal, and has a brown color. Simultaneously there is induced in the liver a chronic inflammation, which affects the *interstitial tissue*, attacking first the cellular tissue surrounding the acini, causing hyperplasia of it, and finally atrophy of the gland-cells by pressure, with previous arrest of secretion by pressure upon the vessels and ducts. The organ becomes swollen and livid, sometimes remaining so, sometimes undergoing a gradual transformation into the classical hobnailed liver, sometimes changing into a shrunken, irregular mass, deformed by contracting bands.

Influence of phosphorus on the osseous system.

Dr. Wegner divides this heading into: 1. *Experiments in which the vapor of phosphorus is brought immediately into contact with the periosteum.* 2. *Those in which the drug simply reaches the periosteum through the circulation.*

No. 1. If rabbits be exposed for some weeks to an atmosphere of phosphorus-vapor, after the first state of bronchial irritation they usually

become accustomed to it, and do not seem to suffer, and in the macerated skull the only abnormality to be seen is a fine osteophytic periosteal layer upon the nasal bones. In a very few cases, however, bony swellings appear in the upper or lower jaws, with great enlargement and caseous infiltrations of the soft parts, which changes constantly increase until the animal's eating is so interfered with that it starves to death. After maceration there are found in such jaws enormous osteophytic growths, generally starting from the alveolar margin, and in the lower jaw involving the whole horizontal ramus, in the upper often extending to the nasal, lachrymal, and even frontal bones; there is also partial necrosis of the original bones—in a word, changes similar to those seen in man under like circumstances.

The fact that both in match-makers and animals only a small proportion of those exposed suffer, points to an individual predisposition. This has been found, in man, generally to be caries of the teeth, but sometimes a wound of the jaw, and in rabbits Dr. Wegner has found the same rule to hold good. If a piece of mucous membrane be snipped off the inside of the jaw of a healthy rabbit the wound soon granulates, but if the animal is being exposed to phosphorus-vapors the changes previously noted are set up. That the action of the phosphorus is a local one, Dr. Wegner thinks is shown by the following facts: 1. The periosteal changes do not occur when the phosphorus is given in pill form, even when the periosteum of the jaw is severely wounded after and during the continuous administration of the drug for months. 2. When the tibia is partially bared in the healthy rabbit, by removal of soft parts, a granulating wound results in the healthy animal; but under exposure to the phosphorus atmosphere—periostitis similar in character to that which occurs in the jaw.

From these experiments Dr. Wegner draws the conclusion that the phosphorus necrosis of match-makers is a purely local disorder, and not the expression of a constitutional affection.

No. 2. If an animal be fed with doses of phosphorus too small to affect the stomach and liver for a length of time, certain changes are induced in the bones, changes which appear sooner and are more marked in growing animals than in adults. At the position where spongy tissue ought to be formed in the growing bone, dense, solid tissue arises, which, to the naked eye and microscope, reveals the structure of well-formed bone. The spongy tissue already formed does not change; it is the new bone whose formation is altered. If the feeding be continued the dense mass at the end grows larger and larger, and the old spongy tissue, in accordance with the physiological law, is absorbed to make room for marrow-tissue, until at last the bone has no spongy tissue left. After this the solid newly formed tissue itself be-

gins to be absorbed; the oldest, first developed portions are changed into red marrow-tissues.

During the feeding, changes also occur in the bony substance formed by the outer periosteum; the new bone looks normal, but under the microscope is seen to be filled with dense masses, which encroach upon the Haversian canals, and finally there is a general narrowing of these canals, which affects even the bone formed before the taking of the phosphorus.

In regard to the effect on the bones of the regular ingestion of phosphorus from birth to adolescence, Dr. Wegner made some experiments without very satisfactory results; he explains at length the great difficulties which beset such inquiry, but we have not here space to follow him. Suffice it to state, that the indications seem to be that development is hastened, and still more doubtfully that the actual mass of the bones is increased.

If small doses of phosphorus be given continuously to the adult animal, the spongy tissue in the long and short bones is thickened, and the compact tissue rendered more dense. After a time new bony tissue is deposited on the inside of the shaft of the long bones, encroaching upon the marrow cavity. This may continue until the bone actually becomes solid. The process does not go on *pari passu* in the different bones. The general course is, tarsus, tibia, bones of the forearm, femur, humerus. There is no corresponding hypertrophy of the muscles, and the movements of the animal become, in consequence of the weight of the bones, very slow and awkward. The analysis of the bones shows that their constitution is about normal.

Dr. Wegner occupies some pages with the discussion of the therapeutic effects of phosphorus on osteomalacia and rickets, but has had no sufficient opportunities to arrive at any definite conclusion. He, however, states, as the result of experiment, that the callus thrown out after fractures, resections, etc., is more dense when phosphorus is given than it is under other circumstances, and that the formation of new osseous tissue is also accelerated.

Theory of Chronic Phosphorus Poisoning.—Dr. Wegner, after discussing the theories of acute phosphorus poisoning briefly, and pointing out the difficulties of the subject, proposes the question: Is it phosphorus or one of its compounds (and if so, which one) in the blood which causes the symptoms of chronic poisoning? When phosphorus is taken into the stomach, he says, it is evident that it must be absorbed, either as phosphorus, phosphuretted hydrogen, or phosphoric acid, and as the second of these compounds would of necessity undergo immediate oxidation as fast as formed or absorbed, the question is narrowed down to the other two. He has found by experiment that

it is impossible to produce by the administration of phosphoric acid in any way or quantity the peculiar changes in the stomach and liver seen in chronic phosphorus poisoning—a chronic gastro-intestinal inflammation may, indeed, be set up; but it is catarrhal, non-specific, entirely distinct from the nutritive changes of phosphorus poisoning; further, the liver is never affected by the acid.

The influence on the bony system is not so clear, because it is possible by the continuous administration of very large doses of phosphoric acid to cause thickening of the bones of growing animals. Yet to do this 800–1000 times the proportional dose of the acid is required; smaller quantities have no effect, and it appears most reasonable to believe that the phosphorus acts as phosphorus simply.

The next question Dr. Wegner approaches is, whether phosphorus acts directly by a specific action on, or irritation of, the bone-forming tissues, or indirectly by offering more phosphates to them. He decides that the action is a direct one, for the following reasons:—

First. The newly-formed tissue of chronic phosphorus poisoning certainly is in its first stages soft, cartilaginous. Second. There is no excess of phosphates in the bone even after the most prolonged use of the drug. Third. When the food is deprived of lime the same new tissue arises, but it remains in the soft cartilaginous condition. Dr. Wegner finally closes his essay with a discussion of the bearing of his discoveries upon the therapeutic use of phosphorus.

THE THERAPEUTIC VALUE OF THE MURIATE OF LIME.

In the *Edinburgh Med. Journal* for July Dr. Begbie has an elaborate memoir upon the therapeutic value of muriate of lime, in which he gives a review of the English literature on the subject as well as his own experience, which he states to have been large. He says, that, as stated long ago by Dr. Beddoes, the salt is of very great value in the chronic diarrhœa of children, associated with feeble appetite, anæmia, enlarged belly, and hectic symptoms. He also adduces much testimony as to its remarkable efficacy in cases of scrofulous taint with enlargement of the cervical glands, confirming this testimony by his own experience. In such cases he has seen the most brilliant cures under its use, after the complete failure of iodine, cod-liver oil, and all the other orthodox remedies. In some cases it requires to be taken for a long time, in some instances even for months, before its beneficial effects are seen; generally, however, the glands begin to soften and lessen in size after a few weeks, and the general symptoms consenta-

neously to improve. The salt has a disagreeable, mawkish taste, to which patients generally soon become accustomed, especially when the drug is taken in milk. Dr. Begbie also affirms that the chloride is of equal value in acquired and hereditary scrofulous adenitis. He states that he has used it with great benefit in *tabes mesenterica*. In Paris he saw it used many years ago by Cazenave with asserted success in lupus. The dose for an adult is from ten to twenty grains three times a day, gradually augmented to thirty grains, unless symptoms of local gastric disturbance are developed. The Doctor is partial to the old solution of the *Edinburgh Pharmacopœia* as a ready means of administering the drug. To young children the commencing dose is from two to six grains. It is best administered in milk, shortly after meals, although it may be given with impunity on an empty stomach.

XYLOL IN SMALL-POX.

Dr. James B. Russell has a paper in the *Glasgow Med. Journal* for May, in which he analyzes and shows the insufficiency of the evidence that xylol has any specific virtue in variola. He also reports a number of cases in which he has used it, and further says:—

"I have used xylol in other cases than those; but not observing any obvious effect, I have not prosecuted its further use. I may remark that the progress of the disease, its complications and its sequelæ, seem to me to be recognizable in those cases exactly as if no xylol had been introduced. We have persistent delirium, pulmonary congestion, erysipelas, pulmonary gangrene, and numerous boils, these latter being rather inconsistent with any antiseptic theory of the action of xylol.

"In the preliminary notice, to which reference was made at the beginning of this paper, it is stated that Dr. Zuelzer has been in the habit of using xylol in *Tic douloureux*. From observations of its effects on myself, I am sure that in doses of min. xx. to min. xl. xylol acts as a peripheral sedative. In about ten minutes after taking the larger dose on an empty stomach, numbness and languor were felt in the limbs, and in fifteen this had increased so that one leg resting on the other, or the hand resting on the thigh, gave but a dull sense of pressure. Locomotion was uncertain and languid; and the intellect was drowsy, but without marked stupidity. This condition disappeared slowly.

"One word as to the administration of xylol. In water it is very acrid. It makes an imperfect emulsion with yolk of egg, and it is

soluble in rather more than its own bulk of spirits of wine, and also in all proportions of olive oil. The spiritous solution was rejected, both because the spirits of wine is itself an active agent, and might have vitiated the results; and also because the olive-oil solution was found to be so eligible. In equal parts it forms a perfect solution, the resulting liquid having none of the viscidity of oil, pouring readily and being quite palatable without dilution. A teaspoonful gives the usual dose of min. xxx.

APOMORPHIN.

In the *Glasgow Medical Journal* for May is a translation of a paper by Dr. Franz Riegel and Dr. Rudolf Boehm on apomorphin, in which a sketch of its history is first given, and then a number of experiments on man detailed.

A one per cent. solution was used. The experimenters found that Merck's specimen acted more slowly and more disagreeably than the English. In summing up the results with the latter they say:—

"First of all, as regards the *dose* administered in man, it varied between .003 and .011 grms. In four cases it was 3 mgrms.; in three, it was 4 mgrms.; in three, it was 5 mgrms.; in one, it was 7 mgrms.; and one, 11 mgrms. But it must be observed, that in all these cases the effect was the same; that in none of them, beyond the emetic effect and the variations of pulse and temperature accompanying the act of vomiting, did further concomitant effects or consequence appear even with the largest doses. As we have convinced ourselves, through frequent repetition of the experiment with different large doses in the same individual, the administration of twice or thrice the quantity of the dose from which an effect has been already proved to follow, produces no more result than that from the smallest efficient dose. It must certainly, therefore, be reckoned not the least important property of apomorphin, that its administration has great scope, and that even large doses may be used with safety.

"As a second important element we must mention the smallness of the active dose of our drug.

"As a third, and most important peculiarity of our drug must be mentioned the possibility of its employment subcutaneously. We may specially remark that we never observed, either in man or animals, any local irritation at the point of injection; neither has the act of injection been accompanied by special pain, apart from the mere manipulation of the needle. We may add that we have ex-

perimented with different strengths of our preparation, but that neither with one per cent. nor with five or ten per cent. solutions has irritation been produced. The part of the body selected is of no importance as regards the ultimate result. The advantage of the administration of emetics thus must be very apparent in the treatment of children, and not unfrequently even in adults, in cases of poisoning, and where there is coma or loss of consciousness, and in many other cases.

"A fourth, and certainly not unimportant property of our drug is to produce its specific action comparatively soon after introduction, and after very short preliminary symptoms, and sometimes even without any.

"The difference in this respect, in comparison with the other emetics, requires no comment. We may here record an observation which we made both on the English preparation and on Merck's, viz.: that while apomorphin preserved in the form of powder seems not to lose its activity in the least, as is evident from the circumstance that after more than a year our English preparation showed striking results, still, once dissolved it seems very soon to decompose and lose its strength. We were able to demonstrate in the solution a daily diminution of activity, though it still, in comparison with other emetics, continued prompt. Further observations will test the accuracy of our remark.

"We must lastly point out a fifth agreeable property of this substance—that, as may be partly explained by the rapidity with which it acts, comparatively very trivial and transient collateral effects occur, especially never unpleasant after-effects such as accompany tartar emetic. In many cases vomiting took place quite rapidly without any previous symptoms, and after one or more acts of emesis the patient felt perfectly well. At most, a few general symptoms for a short time preceded and succeeded the act of vomiting, and the duration of these symptoms was always much shorter than attends any hitherto known emetics. Generally several minutes passed after the introduction of the apomorphin, during which there was no objective or subjective change. Soon there set in headache, giddiness, especially a frequently expressed inclination to yawn, and a variable degree of faintness. In not a few cases vomiting was preceded by the outbreak of perspiration, more or less copious, sometimes over the whole body, at other times confined to the face. Along with this there was frequently drowsiness and a certain amount of apathy. As soon as emesis was over, the symptoms above mentioned always began to disappear. The actual vomiting was preceded, though not in all cases, and only for a short time, with eructations and retching. In a few cases vomit-

ing came on so suddenly and unexpectedly that, without any previous warning, at one bout all the contents of the stomach were expelled. In these cases, generally, the symptoms also following the act were so slight that the patient had scarcely any discomfort immediately after. But always (and this is of much importance in contrast with other emetics), in all cases, the patient was perfectly well again very shortly after vomiting, and only in the later observations, in which a less active preparation was used, were the after-effects somewhat prolonged, though even then, in comparison with other emetics, they were both much shorter and much less severe.

"With reference to the action of apomorphin on the eye we have only negative results to show. In none of our experiments was any obvious alteration of the pupil observed. As regards the pulse, the same effects were not observed in all cases. In many cases the pulse fluctuated within slight limits before emesis, until during the act it became moderately quickened, but, however, shortly after the cessation of vomiting, either immediately or after rapidly sinking below the normal, returned to its former figure. In other cases again a distinct increase in rapidity set in shortly after the injection, but in general, as anxiety, malaise, drowsiness, and perspiration occurred, gave place to a diminishing rate. At the same time there was a decided diminution in the strength and volume of the pulse. With the act of vomiting there again came a considerable acceleration, after which, whether further vomiting followed or not, the pulse either returned to the normal or again presented the above character. Always according to the duration of this stage of depression, the pulse remains for a corresponding length of time distinctly slower, of less volume, and softer than before.

"The respirations generally, if no fortuitous mental influences existed, were at first unchanged, immediately after the injection.

* * * * * *

"We have already noted the valuable property peculiar to apomorphin among emetics, the absence of secondary effects. Our results agree with those of Matthiesen and Wright, and also Siebert. More particularly the intestinal canal, which is often excited by other emetics to sympathetic action, is not affected except in emesis; and we have never observed pain in the stomach, gastric derangements, diarhœa, or any similar symptoms."

In the *Union Pharmaceutique* for June, 1872, is a paper by Dr. Meyer, translated from *Nieuw Tijd. voor Pie. in Nederland*, which contains, however, nothing new, but calls attention to the observation of H. Blaser (*Apothek.-Zeitung*, 1872), that an aqueous solution of

apomorphin changes into a deep emerald color in twelve hours, and becomes unfit for use. Dr. Meyer confirms the superiority of the English apomorphin over the German.

ON THE TREATMENT OF VARIX BY SUBCUTANEOUS INJECTIONS OF ERGOTINE.

BY DR. PAUL VOGT.

Ch. Ratshenberg, M.D., translates (*Atlanta Med. Journal*) as follows:—After the observations of Von Langenbeck in relation to the cure of two aneurisms by subcutaneous injections of ergotine (*Berliner klinische Wochenschrift*, 1869, No. 12, p. 117)—followed, first, by a communication of Schneider, made at the meeting of the Society for Scientific Medicine, at Königsberg, on the 25th of May, 1869, on the cure of an aneurism of the femoral artery, and finally by one from Dutoit (in *Von Langenbeck's Archives*, vol. xii.) on the cure of one of the subclavian artery by the same means—had almost beyond a doubt established the effect of the preparations of ergot on the blood-vessels, particularly in the form of subcutaneous injections of ergotine, as they were first used by Drasche, of Vienna, against hæmoptysis (*Centralblatt für medicin. Wissenschaften*, 1868, No. 52), I commenced last summer a series of experiments in relation to the effect of ergotine in other morbid conditions of blood-vessels.

I first tested its effect in a disease in which our surgical remedies, as far as a radical cure is concerned, have been almost entirely powerless, to wit, *in varicose veins in the leg.* As the leading principle which so far has governed the radical treatment of varices—the production of more or less extensive obliteration of the cavity of the diseased vein—by whatever method it may be carried into effect, involves dangers much greater than those resulting from the disease itself, we have generally, by our efforts to use only safe methods of relief, been confined to a mere palliative treatment.

The effect of ergotine in this disease was tested with a view of regulating the circulation, and removing expansion and engorgement of the vessels.

A man sixty years old, who had suffered for years from extensive varicose veins of the right leg, was treated with subcutaneous injections of extract secalis cornut. aqu. 2, 0 (ʒ i.), with spirit vini and glycerine, ana 7, 5 (108½ grs.), in such a manner that principally two localities, where the varices were most largely developed, were used for injections. The outlines of a varix about six centimetres (nearly two inches) long, and as thick as the little finger of the human hand, run-

ning across the tibia, were marked on the surface of the skin by lunar caustic, and about its centre a whole syringe of solution of ergotine (0.12 or 1⅘ grs.) was injected under the skin every other day. In the course of eight days the varix had totally disappeared, and after the patient had been walking about six weeks in his usual way, no sign or symptom of the old disease could be seen or felt on the place where it existed before.

Another varix, of the size of a hazel-nut, on the external calf of the leg, was made to disappear, in the same individual, by one single ergotine injection under the skin above it.

At the place where the injections had been made, a hard and rather circumscribed infiltration made its appearance, but showed, notwithstanding the thin and atrophic skin of the rather senile individual, no inclination to inflame or become gangrenous, but disappeared without causing any notable pain or inconvenience.

For the purpose of becoming still better acquainted with the effect of ergotine on the blood-vessels, I caused Dr. Potel to institute two experiments, with the intention of—

1. Testing microscopically the effect of ergotine on the vessels of the mesentery of the frog.

2. Establishing sphygmographically the changes of the pulse produced by ergotine.

These experiments were made under the supervision of Prof. Landois,* and established the fact, microscopically and sphygmographically, that ergotine acts on the muscular coat of the blood-vessels, the arteries as well as the veins (Inaugural Dissertation, Greifswalde, 1871).

After this, numerous patients in the surgical clinic and polyclinic of this city, with varicose veins, were treated by subcutaneous injections of ergotine, in the manner above described, and the astonishingly favorable effect of this treatment, even in the most enormous varicose enlargements, was distinctly confirmed. For an explanation of this effect we must take the following points into consideration :—

1. The above experiments and clinical observations demonstrate that the subcutaneous injections of ergotine cause, primarily, a contraction of the muscular coat of the arteries. By this diminution of the calibre of the arteries, which most prominently takes place in the medium-sized vessels, as they are most richly supplied with smooth muscular fibres, the quantity of the blood which reaches the veins is diminished, but the velocity of its motion increased.

2. The ergotine causes also a contraction of the muscular coat of the

* The author of a late work, "Die Lehre vom Arterien-Pulse" (Teachings on the Arterial Pulse)—full of original investigations and important physiological facts.—TRANSLATOR.

veins; and if in varices of very long standing this faculty of contraction may almost seem to be abolished, it still exists, to more or less extent, in many places along the course of the diseased vessels; and that it is very considerable in varices of not too long duration is demonstrated by the fact that the enormous varices which we frequently see in pregnant women are often, within a few days after delivery, reduced to very common varicose enlargements.

Whether this favorable effect—which, so far, has been clearly established in all cases—will finally prove sufficient for a radical cure, can only be demonstrated by a longer observation and control of the cases treated. The results, however, so far obtained, invite at least further experiment and further application of a remedy which, in all cases, can be used without any danger; and I have already commenced to use it, and partly with favorable results, in other venous diseases—for instance, varicocele, hemorrhoids, and certain forms of angioma.

In order to gain further physiological clues for the therapeutical use of this agent, I endeavored to determine whether the subcutaneous ergotine injections would first and immediately produce contraction of the vessels at the place where they are made, or *whether this effect took place only after absorption, from the centre of vaso-motor action.* The fundamental experiments were the following:

1. Ergotine 0, 12 ($1\frac{1}{8}$ grs.) was subcutaneously injected into the right femur of a frog, and, two hours and a half after, this leg amputated below the knee. Hemorrhage very small, while amputation of the leg of the other side, at the same place and at the same time, shows considerable hemorrhage. The same experiment, repeated twice on other frogs, shows very little difference in the hemorrhage—giving rise to the idea that perhaps the compression caused by the injected fluid occasioned the difference observed in the first experiment.

2. The cervical portion of the sympathetic nerve of a rabbit is divided on both sides as high up as the upper cervical ganglion. After the vascular congestion and increased temperature following this operation, on both sides of the head, is well established, 0, 06 ($\frac{6}{100}$ grs.) ergotine is subcutaneously injected at the base of the right ear. No material difference between the two ears can be noticed within from one-half an hour after the injection up to the next day.

3. After injecting at the base of the right ear of a rabbit 0, 10 ($1\frac{1}{2}$ grs.) ergotine, the cervical portion of the sympathetic nerve of the same side, as far as the upper cervical ganglion, is divided. Soon afterwards, a very considerable engorgement of the vessels of that ear takes place; but the ear on the other side, where the sympathetic nerve has also been divided without previous injection of ergotine, shows the same increased vascularity as the ear of the other side.

After all this we must arrive at the following résumé: That ergotine, subcutaneously injected, causes contraction of the muscular coat of the blood-vessels; that this contraction of the smooth muscular fibres is caused by the intermediation of the vaso-motor centres. Whenever the influence of the latter is interrupted, the effect of ergotine is paralyzed. If ergotine affects the vessels at the place where it is injected with any more intensity than on more distant portions of the body, it may be caused by a direct influence on the peripheric extremities of the sympathetic nerve analogous to the local effect of the subcutaneous injections of morphine, which, besides their general effect, seem to produce, also, a local anæsthesia of the peripheric nerves of the locality where the injection is made.—*Berliner klinische Wochenschrift*, March, 1872, No. 10.

TREATMENT OF THORACIC ANEURISM BY GALVANO-PUNCTURE.

Dr. Ciniselli is about publishing a work on the above subject, and has, in advance, printed an abstract in the *Gazette Médicale de Paris*, July 6, 1872. In it he states that he has compiled and studied all the cases on record, some twenty-three in number. These cases are divided into two distinct series, those (nine in all) between 1846 and 1866, and those between 1868 and 1870 (fourteen). The first of these were merely experimentally, and the second were really scientifically treated.

In the first set the disease had advanced beyond all hopeful limits before treatment, yet three of the nine cases were ameliorated.

In July, 1868, a favorable case offered itself to Dr. Ciniselli; it was cured and reported in the *Gazette des Hôpitaux*, 1868, No. 34, and was the first of the second series. In this series seven aneurisms of the cavity of the chest were manifested externally by protrusion of the ribs, pulsation of the intercostal spaces; the other offered a more or less marked tumor posteriorily, with greater or less erosion of the thoracic walls.

Of the purely thoracic aneurisms, three were of the ascending, three of the transverse aorta, or brachio-cephalic trunk. The secondary aneurisms had their origin in primary internal aneurisms, three of the ascending, three of the transverse aorta, and communicated by a large opening with the artery.

The galvano-puncture was practised as in my first case. A Voltaic pile of thirty couples (zinc and copper), disposed in two columns, with saturated solution of salt. The rheophores were so arranged that one

could avoid as much as possible the shock in changing the direction of the current—steel needles, with the two poles successively acting upon them in the well-known manner, to avoid the electro-chemical cauterizations.

The galvano-puncture, so performed, has never given rise to an accident; the shocks have been very moderate; in one case all suffering was avoided by anæsthesia. During the operation the formation of an electrical clot was shown by the change in moving the needles, and by the hardening of the tumor; the extraction of the needles was always difficult, on account of their oxidation, without appreciable effusion of blood.

The operation was shown to be innocent, even in the most dangerous cases, with a very moderate general reaction, and a local reaction readily controllable by the application of ice and lead-water.

In the seven cases in which the aneurism was confined to the cavity of the chest, the amelioration has been prompt and progressive. The relief has, in six of the subjects, now lasted for seventeen months, nine months, eight and a half months, four months, and in two cases three months. The seventh case relapsed and died. The cases of external secondary aneurisms all relapsed and died. At the post-mortems in some of them the electrical clot was still very apparent. It could be distinguished by being central, adherent to the sac at the point where the needles had entered, globose or irregular, and composed of lamellated layers; also by being whitish yellow, composed of fibrine mixed with much albumen, and containing blood in its interstices. Its chemical composition is different from that of ordinary blood.

The electrical apparatus best fitted for this purpose is one which unites sufficient tension with the least possible quantity—a pile composed of a large number of very small plates meets these conditions. A Voltaic apparatus of thirty plates, of ten centimetres of surface, meets the indications best. The needle-points should be about one and a half centimetres apart, and from two to four centimetres within the aneurismal pouch. In order to avoid chemical action it is necessary to alter the two poles at the end of certain periods of time, mostly from four to six minutes. The duration of a treatment varies from thirty to forty-five minutes, according to the number of needles used.

CUTANEOUS ABSORPTION.

M. Brimond, in a communication to the French Academy, arrives at the following conclusions:—

1. Cutaneous absorption is demonstrated by experiment to take place from medicated vapor and water baths.

2. Ordinarily it does not occur at a temperature of 38° C., *i. e.*, one below that of the body.

3. The absorption of iodide of potassium is in proportion to the heat, duration of the bath, and the quantity of iodide of potassium.

4. The elimination of the salt commences after the bath, and generally ceases entirely in twenty-four hours.

5. When ten or twelve baths have been taken, the elimination continues for three or four days after their disuse; if twenty or thirty baths have been taken, it persists for ten or twelve days afterwards.

9. A simple vapor, followed by energetic frictions with soap, facilitates greatly the absorption.

10. The vapor never contains a trace of free iodine, but only iodide of potassium.—*Gazette Médicale de Paris*, July 6, 1872.

Chloral in Puerperal Convulsions.—In the Dublin *Journal of Medical Science* for June, 1872, Dr. McDowell details a case of puerperal convulsions and mania, in which chloral seemed "to act like a charm."

NORMAL PRESENCE OF ALCOHOL IN THE BLOOD.

Under the above caption Dr. H. Ford has a very interesting paper in the *New York Medical Journal* for June. Believing that liver sugar is converted into alcohol in the lungs, he has endeavored to find that substance.

He first made a calculation as to the amount of alcohol generated, supposing his theory to be true, as follows:—

Scharling estimates the carbon given off from the lungs of a man, in twenty-four hours, at 325.31 grammes. Supposing that all of this carbon (which is not strictly true) results from the destruction of hydrocarbon, and that this hydrocarbon is hepatic sugar, 813.26 grammes of this substance would be fermented, producing 415.65 grammes of alcohol, or 6,415 grains. As this quantity represents the entire supply during twenty-four hours, $\frac{6415}{1440} = 4.45$ grains of alcohol would pass through the lungs in one minute; and as by Müller's estimate 76,800 grains of blood is borne through those organs in the same time, we have, by this calculation, $\frac{4.45}{76.800} = 0.5794$ of a grain of alcohol present in the lungs to 10,000 of blood. The two results approximate closely enough for such calculations. So that, while no less than 23.05 oz. (Scharling) to 24.36 oz. (Liebig) of glucose should be poured into the circulation within twenty-four hours, representing *about thirteen ounces* (av.) *of alcohol*, a quantity amply capable of subserving most important functions, whatever these may be, it is impossible that the blood of the vena cava or the lungs should *contain* more than the *half*

of one part of alcohol in 10,000 parts, even if no particle of alcohol so formed be oxidized.

Impressed with the difficulty of finding such minute amounts, Dr. Ford first made some preliminary experiments, and found that a few drops of alcohol could be recovered from a quart of distilled water, as could also one part of alcohol from 3 or 4,000 parts of blood, even several days after its addition.

He next experimentally determined, that during the incipient putrefaction of blood the disappearance of glucose is due, in part at least, to its conversion into alcohol and carbonic acid, and then, by similar experiments, proved that the same changes occur in decomposing liver and lungs, from both of which he succeeded in recovering alcohol.

Commenting on these facts, Dr. Ford writes as follows:—

These experiments had been instituted as a preparation for the important question, shortly to be proposed, concerning the normal presence of alcohol in the organs and blood of animals. The process by which, after death, organic matter advances to destruction is similar to that by which, during life, its constituents are conducted through their natural metamorphoses. In both cases nitrogenous colloids are eventually resolved into crystalloids. The first step is always the absorption of oxygen. If glucose be in contact with a nitrogenous colloid undergoing oxidation, as a preliminary to further change, its elements group themselves into *alcohol* and *carbonic acid*. I have enjoyed quite unusual opportunities for studying the common processes of distillation, and am convinced that Liebig's views are essentially correct. The formation of alcohol in the fermenting-tun begins with the oxidation of gluten, which consists mainly of *vegetable fibrine*, advances with it, *pari passu*, and ceases with it. If animal fibrine be oxidized in the lungs, it must act similarly, and with equal power; indeed, be far more effective, inasmuch as hepatic sugar is greatly more fermentescible than "grape-sugar." Adopting Virchow's views respecting its tissual origin, *fibrine* is emptied by the lymphatics into the venous system, and borne into the lung-capillaries, where it absorbs oxygen with great avidity. It is in the act of decay, or Liebig's "*eremacausis*." If hepatic sugar be in contact with it at this moment, it must surely be resolved into alcohol and carbonic acid. This alcoholic fermentation must, therefore, be a constant phenomenon, varying directly in rapidity and completeness as the amount of fibrine present and the intensity of oxidation.

After oxidation, if fibrine be left to itself, out of the body, it putrefies very soon. Within the organism it is likewise broken up into simpler bodies, most probably in the liver; for fibrine disappears in this organ—which it reaches by two channels—with a simultaneous

formation of glycogen and fat, biliary acids, and probably uric acid.

Dr. Ford next attempted to, and did obtain alcohol by the repeated distillation of freshly-drawn blood. He gives a long and elaborate account of his methods and precautions, which we omit, merely stating that they appear to have been very skilful and satisfactory both in conception and execution.

The tests which he relied on were as follows:—

1. *Chromic Acid dissolved in Sulphuric Acid.*—By adding 0.25 grammes of crystallized bichromate of potassa to 100 grammes of concentrated and chemically pure sulphuric acid, the salt is decomposed, chromic acid liberated, and a rich brownish-yellow liquid obtained. When to any fluid, containing the feeblest trace of alcohol, an equal bulk of this reagent is added, much heat is evolved, and, by deoxidation of the chromic acid, sesquioxide of chrome is produced, imparting to the fluid an emerald-green hue. This is an exceedingly delicate and reliable test; nothing similar occurs with other volatile fluids obtained from fermented or organic matters; sugar, dextrine, and gum, uric acid, urea, and albumen equally effect this reaction, but must be obviously absent in distilled fluids.

2. *Inflammation of the Vapor of Alcohol in a Test-tube upon Ebullition of the Final Distillate.*—This most striking and important test I have found applicable when not less than two per cent. of alcohol exists in an aqueous fluid; below this percentage the alcoholic vapor is too much diluted with steam to burn even at the first moments of ebullition. Some care is requisite in the use of this test. The quantity of liquid should be about one-tenth of the capacity of the test-tube; the flame over which the tube is held should be very moderate and steady, and should give but little light; the room should be darkened; a wax-taper ready lighted should be held just above the upper edge of the mouth of the tube; the entire length of the test-tube should be heated before the liquid is made to boil, and the tube held in an oblique position by a bit of bent wire, that it may be closely watched, as the least discomposure may prevent our observing the inflammation of the vapor, which is sometimes only momentary. When all is properly done, if alcohol is present in more than one and a half or two per cent., a flash of flame is seen to descend into the tube at the moment of ebullition, or a little after it; and if alcohol be present in greater quantity the vapor continues, for a longer or shorter time, to burn at the mouth of the tube, during the continued boiling, with a characteristic flame. No other substance met with in the distillate of animal matters is capable of inflammation in this way. The *primary distillate*, and *all successive ones*, until the last portions are

reached, constantly refuse to burn as above described, no matter how abundant the empyreumatic substances may be. Some organic acids, as formic and acetic, are inflammable in the state of vapor, but only when pure or nearly so; the greater part, however, of the final distillate of these processes is water, and *acids are not* present, as it is neutral, or *must be made so*, previously to weighing or testing.

3. *The Optical Appearance within the Conducting-Tubes when the Distillate just begins to boil.*—Alcohol comes over in greatest strength in the first moments of distillation, and, if present, may always be seen to play in a mobile manner just in advance of the watery dew-drops, as both progress rapidly along the interior of the conducting-tube. To observe this peculiar play of the successively condensing and vaporizing alcohol, it is essential that the drops of water, previously deposited from the humid air within the interior of the tube, should have been dissipated by a gentle heat from the flame of a lamp; the conducting-tube being allowed to cool again before ebullition. This appearance is of course only to be observed between the balloon and the condenser. It is a trustworthy guide for very minute quantities of alcohol, and should be studied in the distillation of dilute mixtures of alcohol and water. If carefully looked for and not observed, alcohol is hardly present; especially as the terminal distillations of a series are approached. Other volatile substances likewise condense at the first bend of the conducting-tube, but their "play" is entirely different, and they invariably *precede* the appearance due to alcohol; they are, moreover, often milky, or yellowish, when direct heat has been applied to the organic matter experimented on. It is hardly necessary to remark that the purification of the final distillate *is not complete*, so long as this ante-alcoholic "play" is observable.

In order to arrest any possible oxidation of alcohol into acetic acid, in some of his experiments Dr. Ford added sulphuretted hydrogen to the blood as it was drawn.

The results of ten experiments are shown in the following table:—

No.	Weight of Blood.	Interval from Death to 212°.	Temperature when distilled.	Weight of First Distillation.	Weight of Final Distillate.	Weight of Alcohol obtained.	Weight of Alcohol for 10,000 parts of Blood.	With or without H. S.
15	6970	60 m.	....	....	.....	0.0650	0.0932	without.
16	9734	56	101°	1692	0.8416	0.0198	0.0203	without.
17	9137	70	100.3°	1636	1.6218	0.0605	0.0662	with.
18	9236	77	99.5	1623	3.6130	0.0444	0.0489	with.
19	8988	60	99	1555	2.6092	0.1357	0.1509	with.
20	8854	60	98	1555	1.7320	0.0760	0.0858	with.
21	9423	45	96	1560	1.8722	0.0708	0.0751	without.
22	9112	61	98	1550	0.9552	0.0350	0.0384	without.
23	27330	48	98	14050	10.6883	0.2928	0.1071	with.
24	36300	51	99	17600	14.0606	0.5652	0.1556	with.

In conclusion, Dr. Ford sums up as follows:—

It has been premised that, even if oxidation were in complete abeyance, not more than *half a part* of alcohol could exist, at any given moment, in ten thousand of pulmonary blood. This statement was based upon the result of a double calculation, whose elements were so different that their common evaluation must be accepted as something *very near the truth*. These two figures I now subjoin, with those exhibiting the results practically obtained in the experiments detailed, all for 10,000 parts, as follows:—

Alcohol in the capillary blood of the lungs:		
	calculation based on "*carbon ingested*"	0.5403
	" " "*carbon exhaled*"	0.5794
"	putrescent lung-tissue (mean of ex. 8, 9, and 11)	0.3819
"	fresh " (" " 12, 13, and 14)	0.3076
"	putrescent thoracic blood (mean of ex. 1, 2, 3, 4, and 5)	0 7625
"	fresh " (mean of table)	0.0841
"	putrescent liver-tissue (ex. 6)	4.3138
"	fresh " (mean of ex. 25, 26, and 27)	0.0190

An examination of the above figures will show:—

1. That from putrescent liver-tissue the largest yield was obtained. Much of the alcohol in this case must have been lost by acetification, and partly, no doubt, by transformation into lactic acid and other products.

2. That the least quantity obtained was from fresh liver-tissue. It would appear that the fermentation of hepatic sugar merely *begins* in the hepatic capillaries.

3. That a far greater quantity of alcohol was obtained from blood in a state of incipient putrefaction than from fresh blood—about nine times as much. Under the circumstances of the slaughtering, blood from the inferior cava, laden with sugar, must become mingled with that from the lungs and other great vessels; it may even escape upward through the auricle and superior cava: mixed thoracic blood must, therefore, contain a large quantity of alcohol after *putrefaction* has advanced sufficiently far to cause the fermentation of all its original sugar. On the other hand, as *fresh thoracic blood* cannot be supposed to have traversed the lungs, it must only contain a small proportion of alcohol, for its sugar has *not been yet fermented;* it must likewise have been largely diluted with aortic blood, which, in the *fasting* state especially, contains no sugar, nor alcohol, probably. As the thoracic blood employed in ten of these experiments should be composed of blood from many different vessels, which are divided at random by the knife, it must contain very variable quantities of sugar and alcohol, always, of course, however, *less* than the blood of the inferior cava.

4. That the greatest amount of alcohol obtained from any of the re-

cent substances was recovered from fresh lung-tissue. Lung-tissue newly extracted from the body retains about half its weight of blood, the number indicating alcohol should, therefore, be *doubled;* this would show that about as much alcohol had been actually procured as calculation warrants us to suppose present. Contrary to what we have just stated with regard to fresh and putrescent blood, we find that *fresh lung-tissue* contains nearly as much alcohol as *putrescent lung-tissue.* The figures show that only about *a fifth* of the sugar originally present remained unfermented after seventy-three minutes, when the fresh tissue was distilled; while no greater increase than *this fifth* took place in the seventy-seven hours during which similar tissues were submitted to putrefaction. Fermentation seems thus to be more active in the lungs *immediately after death,* and probably at its *highest term* during life. This deduction receives tangible support from the fact just now stated, viz., that in *fresh thoracic blood,* which the test by decomposition proves to be rich in sugar, *very little alcohol* is to be found; such blood has mostly been derived from the great vessels, and has not yet passed through the lung capillaries; its sugar has not consequently been fermented. Other considerations, in too great variety to mention here, would lead us to conclude that the capillary system in the lungs is the proper seat of the alcoholic fermentation. As this must vary directly as the oxidation of its ferment (fibrine), if the aëration of the blood be impeded or arrested by the action of toxic or medicinal agents, such as woorara, the ethers, chloroform, etc., or by injury to the M. Flourens's "*nodus vitalis,*" which paralyzes the pulmonary vaso-motor nerves, and induces pulmonic congestion, sugar becomes so abundant in the circulation as to pass into the urine—the animal becomes glycosuric. Alvaro Reynose has published a very interesting little pamphlet on this point ("*Mémoire sur la Présence du Sucre dans les Urines,*" Paris, 1853), in which he seems disposed to accept M. Mialhe's well-known hypothesis of saccharine oxidation in the lungs, in virtue of the alkalinity of the blood. The hypothesis of the alcoholic fermentation of hepatic glucose in the pulmonary capillaries is quite adequate to explain the above phenomena: an animal becomes glycosuric in cases like those alluded to, *not* because glucose cannot be oxidized in the lungs for want of oxygen, but because the alcoholic fermentation is slackened or suspended in consequence of the failure or deficiency of the oxidation of its proper ferment; the constant oxidation of its ferment being a law of this fermentation, as already explained.

5. That if, as before, we consider the lung-tissue operated on as containing one-half its weight of capillary blood, by *doubling* the alcoholic ratio, we have, for the *capillary blood of putrescent lung-tissue* (where we suppose all the sugar to have been converted) the figure 0.7638 =

(0.3819 × 2), which is nearly exactly equal to the mean product of putrescent thoracic blood, all of whose sugar has likewise been converted.

The general accordance of the results above set forth with theoretical anticipations, and their consistency with each other, strongly tend to substantiate the truth of the hypothesis under which the whole experimental series was conducted, as well as to establish the *high degree of accuracy of the methods employed.*

ACTION OF CHLOROFORM.

In the New York *Medical Journal* for June, Dr. Robert Amory states that from a number of unpublished experiments he has arrived at the following conclusions:—

1. The elective action of chloroform for the cerebro-spinal system, upheld by MM. Lallemand, Perrin, and Duroy, by Dr. Anstie, and by others, is not yet proved. The experiments undertaken to disprove this theory, by Gosselin, by Snow, and by Richardson, seem to show, that if the brain of an animal is moistened with chloroform no anæsthesia follows.

2. The injection of chloroform into arteries or veins of any portion of the body does not cause anæsthesia, unless a sufficient quantity is injected to produce coma or death; the carotid, the femoral, and the branchial arteries were employed in this method of experimentation. No sleep followed, unless coma and death supervened. It was observed that the chloroform was absorbed by the tissues and eliminated by the lungs.

3. Blood was directly transfused from one dog, who was in a complete state of anæsthesia from the inhalation of chloroform, to another who had not inhaled chloroform. Five minutes from the commencement of the transfusion, chloroform was exhaled from the lungs of the second dog, though it could not be perceived before. The transfusion was continued without interruption for from fifteen to twenty minutes, beyond which time clots were formed in the tube, so as to interfere with the continuation of the experiment. This experiment was repeated several times with the same result. There was not the slightest appearance of abolition of pain, nor any attempt to sleep, on the part of the second dog. The transfusions were conducted from femoral to femoral artery, or from carotid to carotid.

4. Unless the blood is surcharged with chloroform, the vapor of which may most easily be absorbed in the lung-tissue, no sleep or anæsthesia will follow the administration of chloroform. I am well

aware that there are some cases in which large doses of chloroform have been swallowed, followed by a comatose condition of the patient; the effects in these cases were not always anæsthetic nor hypnotic, but were in a great measure due to a probable congestion in the nervous centres.

5. The physiological action of chloroform is due to the interference with the process of oxidation of tissue, produced by altering the physical condition of the blood-corpuscles, and rendering them incapable of carrying sufficient oxygen through the tissues.

UREDO MAIDIS IN PSORIASIS.

Prof. Gambrini reports, *Rivista Clinica di Bologna* for March, 1872, a case of psoriasis treated with Indian corn fungus (Uredo Maidis?). All other means had been exhausted in the case. The treatment extended over a period of three months. It began by the administration of six grammes of the tincture in sixty grammes of distilled water, to be taken in two or three doses. The number of grammes administered daily was increased gradually up to eighty. An ointment made of thirty grammes of the tincture to sixty grammes of hog's lard was also used as an application to the affected parts. The following is a *résumé* of the phenomena which accompanied the internal use of the medicine. From the first the patient experienced frequent yawning and eructations. The appetite stood at the normal degree for some days; afterwards it went on gradually increasing. A feeling of heat was experienced in the soles of the feet, and also on the backs of the hands. The urine was colored but did not produce smarting. The patient had a horror of baths generally, but delighted to put her feet and hands in water. She could not bear the weight of her usual bed-clothes. She did not experience any diarrhœa or costiveness. The muscular force at first decreased, but afterwards augmented. The patient became more joyful than her wont. She was naturally of a melancholic temperament. There was no perceptible change in the pulse. When it was found necessary to suspend the employment of the remedy, owing to the patient's disgust at it, it was discovered that the *psoriasis* was not so generally spread over the body; that it was limited to the elbows, knees, along the tibiæ, and very few places on the thighs and arm. The scales, which were at first large and numerous, were reduced to almost nothing, and the *pruritus* had almost disappeared. If the use of the remedy could have been continued there is a probability that the disease might have been entirely conquered; as it was, the result was manifestly favorable. In a second case equally favorable results were obtained.—*Med. and Surgical Reporter.*

RESEARCHES UPON THE PROPERTIES OF THE ACTIVE PRINCIPLES OF OPIUM.

M. Rabuteau read a paper upon the above subject before the French Academy April 22; an abstract of which is contained in *Revue de Thérap. Méd.-Chir.*, June 15, 1872. He said that Claude-Bernard had shown by his experiments that the chief active principles of opium act differently upon animals. Only three of them, narceine, morphine, and codeine are soporific, and that these in large doses are toxic in diverse degree, and that they all induce convulsions except narceine.

My experiments, some one hundred and fifty in number, have been made upon healthy or sick men, dogs, rabbits, and frogs. I have studied not only the six principal alkaloids of opium, but also meconia and meconic acid, and have administered both hypodermically and by the stomach.

Thebaine.—According to Claude-Bernard this is the most poisonous to animals of all these alkaloids. This is true, but does not apply to man, who can take without danger ten to fifteen centigrammes of muriate of thebaine. I have found that this substance, injected subcutaneously in neuralgia, acted as an anæsthetic like morphia. I have also found that it is wanting in the power of checking intestinal secretion, and that it is not soporific in man.

Papaverin.—This substance is much less active than thebaine; no symptoms are induced by fifteen centigrammes of its muriate administered hypodermically to the rabbit, twenty-five to the dog. On man it is equally inert, and does not act upon the intestinal secretions, but is slightly anæsthetic.

Narcotina.—Following Bernard, narcotina is the least poisonous of the bases in its action on dogs. It is the same in man, as I have taken at a dose forty-three centigrammes of its muriate without effect. It does not check intestinal secretion, nor is it soporific, either in man or animals. It is not, however, absolutely inert, for it causes in very large doses (three centigrammes) slight convulsions in the frog.

Codeine.—This drug is more dangerous than morphia, and less so than thebaine to the animal. It is otherwise in man. In doses of five to ten centigrammes it produces heaviness in the head and weakness of the limbs. It does not arrest intestinal secretion, and is very slightly analgesic or soporific in man.

Narceine.—This is the most soporific of the opium alkaloids to the animal. It is necessary, however, to inject under the skin of a moderate-sized dog five centigrammes to cause deep sleep. It is much less soporific than morphia in man. But in ten to twenty centigramme doses it causes a calm sleep, not so profound and more natural than that

of morphia. Lastly, this precious substance is largely anæsthetic. It diminishes the flow of urine, has much less action on the intestinal secretion than morphia, but as it does not disturb digestion, is useful in the diarrhœa of phthisis.

Morphine.—This is the most active of the alkaloids as regards man, but, according to Cl.-Bernard, the fourth in rank as regards animals.

Meconine and Meconic Acid.—I have shown that meconic acid is inert even in large doses. I have injected fifty centigrammes into the blood of a dog, and have taken one to three grammes of the bimeconates of soda and potash without producing any symptoms. The reaction of the perchloride of iron and meconic acid could always be developed in the urine, which was neutral. Meconine is equally inactive.

The alkaloids of opium might be classed as follows, in order, accord- to their effects on man:—

Soporifics.—Morphine, narceine, codeine.

Toxics.—Morphine, codeine, thebaine, papaverine, narceine, narcotine.

Analgesics.—Narceine, morphine, thebaine, papaverine, codeine.

Anexosmotics.—Morphine, narceine.

Combined Action of Alkaloids of Opium and Chloroform or Bromoform.—It is known that the combined action of morphine and chloroform is analgesic without of necessity sleep being induced.

A dog which had received, under the skin, five centigrammes of muriate of narceine, and then been put to sleep with chloroform, felt nothing after he awoke. Pinching, sticking, or even treading on his feet caused no indications of pain, and yet he ran about the laboratory. This curious condition lasted for many hours, during which the sensitive nervous system was, as it were, abolished. I have seen the same results in using bromoform or chloral in the same way, and the other alkaloids of opium, except narcotina, in diverse degree.

At the séance of the French Academy, May 13, M. Bouchert read a paper "On the opium alkaloids in regard to their action on children and adults." His conclusions were:—

First—That the alkaloids of opium may be divided in two groups, those which are soporific, and those which are inert.

Second—The alkaloids of the first class differ in activity, and in as large a dose as can be safely administered have no convulsant action, but are toxic when taken in sufficient quantity.

Third—Morphia, with its salts, is the most active of all the opium alkaloids.

Fourth—Codeia comes next to morphia as a soporific and anæsthetic, but it only is one-third as strong as the last alkaloid.

Fifth—Narceine comes next to codeia, but may be taken in large doses without much effect.

Sixth—Papaverine has no effect in doses of one gramme by the stomach, or ten centigrammes hypodermically.

Seventh—Neither narcotine, nor thebaine produces any symptoms in doses of fifty centigrammes.

Eighth—Meconine causes no appreciable effect in doses of thirty to fifty centigrammes.

Ninth—Opianic acid is inert.

Tenth—Morphia and codeia are the only opium alkaloids of therapeutic value.

TREATMENT OF SPERMATORRHŒA.

The occasional introduction of a catheter as large as the urethra will take, is often of the greatest service; it should be passed into the bladder and allowed to remain for five or ten minutes, according to the tolerance of the patient; its mechanical pressure helps to unload the congested capillaries and small vessels of the urethra; its contact deadens and destroys the extreme sensibility of the urethral nerves, and renders them less susceptible to the influence of slight excitants; whilst, by stimulating the muscles, it provokes their contraction, and so renders material assistance in emptying the larger veins. A silver catheter is the best instrument for the purpose, as it exerts firmer pressure than an elastic bougie; and, as the urine can be drawn off through it, the patient will not require to micturate for several hours, which is a point of some importance, as the urethra is often very tender after the passage of an instrument for the first few times. The frequency with which it should be employed depends upon the amount of discomfort its presence occasions; and, if the pain be great, it should not be left in more than a few seconds, lest rigors, swelled testicle, etc., be occasioned. Sometimes the urethra is *extremely* sensitive, and much pain attends the use of the catheter; but this is an additional reason for persisting with it, though a smaller one may be employed at first, so as to cause less pain. I have sometimes found that smearing the catheter with blue or calomel ointment, or with half a grain to a grain of nitrate of silver rubbed down in an ounce of lard, to be of use in obstinate cases; but I prefer the blue ointment to anything I have yet tried. Some camphor, extract of opium, belladonna, etc., may be combined with these ointments, if thought desirable. Care should be taken that these applications do not reach much beyond the curve of the instrument, and it should be thoroughly oiled before using it. The

oversecretion of mucus is always checked by the use of the catheter, whether armed with ointment or not.

Cold bathing, cold douches, etc., should not be employed on going to bed. The ordinary bath in the morning does good; but cold applications at night should be forbidden, as the reaction which follows them will increase the local circulation, and so cause congestion and erection of the penis, and thus increase the probability of emissions.

Not only must the position assumed in sleep be attended to, but undue warmth in bed avoided, whether by using very soft beds or too large an amount of clothing. The bowels should be carefully regulated, to prevent any accumulation within the rectum; and the urine examined from time to time, so as to detect an excess of uric acid, the presence of oxalates, etc., which may render its passage irritating to the hypersensitive urethra. Overdistention of the bladder must, at all times, be guarded against, and the patient warned to pass urine on waking in the morning, lest he doze off again with a full bladder, which is one of the most certain provocations of erection and emissions.

Before commencing to treat this affection constitutionally, it is generally necessary to allay the digestive disturbances, which are so common and often so severe, by giving such remedies as may be applicable to the condition of the patient either with or without the more special medicines. By neglecting to do so, we may not only add to the dyspeptic troubles and obtain no benefit from the drugs given, but a valuable medicine may do harm and be brought into disrepute, in consequence of its being administered at a time when the stomach cannot tolerate it.

Internally, I have found astringents of more use in this disorder than tonics; or they may be combined. Gallic acid, the dilute mineral acids, especially the sulphuric, may be given. Tincture of matico will often be of service, and more so, in my experience, than any other plant rich in tannin, as it appears to act upon the genito-urinary tract rather than upon the bowels, as is often the case with the others.

Ergot is one of the most valuable remedies for this affection, and the liquid extracts of the *Pharmacopœia* is a very efficient and convenient form for giving it; whilst the dilute sulphuric acid can be added, if thought advisable.

When the urethra is very sensitive, and the passage of urine painful, small doses of copaiba are often most comforting; or the other oleoresins may be tried if it disagree; but none of them, in my opinion, is equal in value to copaiba when it can be borne.

I am not disposed to regard strychnine in these cases with very great favor; when there is much irritability of the nerves, I believe it often

adds to this; but when this is subsiding it may be of use as a tonic; so may quinine or iron, but in no other way. I have never given the tincture of iron in the enormous doses (from one to two drachms three times daily) recommended by some, and so I cannot speak personally of its value in such large quantity.

Cantharides, phosphorus (except the dilute phosphoric acid), and the so-called aphrodisiacs, do harm by acting as stimulants to the nervous system generally, and therefore to the local nerves. Cantharides, also, by its action upon the bladder is, especially when given in large doses, a very injurious drug in these cases. For the same reason I disapprove of local blistering; while the sore left by the blister acts, moreover, as a source of irritation, and adds to the liability of emissions.

Belladonna, in my hands, has proved to be an uncertain remedy; in some cases it has appeared to do good by allaying irritation, whilst in others there were no beneficial results from it. The dryness of the throat, disturbance of vision and diarrhœa, which are often caused by it, constitute an objection to its employment in full doses, and without them its value is very questionable.

Camphor is a most useful drug; three or four grains made up into two pills, with half a grain or a grain of opium, and one or two of aloes, have more frequently allayed irritability and prevented emissions than anything I have yet tried. Opium alone does not succeed as well, and a large dose is necessary, so that the untoward symptoms sometimes produced by it are more likely to be incurred.

I have tried chloral in a few cases, and with very great advantage; in doses of fifteen or twenty grains at bed-time it has answered its purpose admirably.

Bromide of potassium, in thirty or forty grain doses, will sometimes be of service; but it seems to me a less certain remedy than chloral, which I am disposed to regard as one of the valuable agents we possess for these cases, though as yet my experience of it is limited.

Suppositories vary much in their action, whatever drugs they may contain. Occasionally they answer well, but often they do not lessen, and I am not sure they do not sometimes increase, the irritability of the parts.

Galvanism I have not employed myself; but in the few instances where I have known of its being tried by others, it has seemed to me to do more harm than good, by adding to the nervous irritation.

Lastly, as to cauterization by the *porte-caustique*, I need scarcely say that I am strongly opposed to this method of treatment; for, if my view of this disorder be correct, this instrument can relieve it in no other way than as the passage of the catheter does. I do not believe that ulceration or other morbid conditions of the ejaculatory ducts are the

causes of seminal losses. We have no evidence that these pathological conditions exist, except, it may be, in very rare instances; and if so, the application of nitrate of silver to the prostatic mucous membrane in every case of nocturnal emission must be unnecessary; and in spite of its alleged harmlessness, I consider it to be a dangerous treatment. I have known two persons die from the effects of the *porte-caustique*, and I have seen others suffer severely from its employment. This may not be the usual result; but I do say that the application of nitrate of silver to the urethra, whether in stick or in strong solution, is at least a very sharp remedy, and will often produce violent inflammation, and sometimes lay the foundation of a stricture or of a chronic irritation of the bladder.

If, then, caustic be applied on an incorrect surmise as to the condition of, and its effects upon, the prostatic mucous membrane and ejaculatory ducts, it is not only an unnecessary, but, in my opinion, an unsafe method of treatment.—*Gascoyne—British Med. Journal.*

CHLORAL.

In the *New York Med. Journal* of June, 1872, is a very able paper by Dr. Robt. Amory, of Boston, which goes far to establish the fact, that chloral acts as chloral, not as chloroform in the system.

He first details a number of carefully conducted experiments, and then comments on them as follows:—

From the above experiments it will be seen that it is not possible to obtain decomposition of chloral into chloroform when the former is mixed with warm, fresh blood, and it is hardly probable that this decomposition occurs in the organism. The decomposition does not occur if the solution of chloral is separated from the blood by a membranous substance such as a sheep's bladder. If, on the contrary, the blood is made strongly alkaline by the addition of caustic soda, the decomposition suggested, but never proved, so far as the author of this article can determine, by Liebreich, Richardson, and others, does take place.

Dr. Amory's next set of experiments are directed to disproving the presence of chloroform in the blood of animals poisoned with chloral hydrate. In these he succeeded in obtaining chloral from the blood and from the air exhaled from the lungs of such animals, but failed to find a trace of chloroform.

The next experiments proved that the blood of an animal poisoned by chloral does not show the presence of chloroform; while that of an animal poisoned by chloroform does show very distinctly the presence of chloroform.

The next step was to disprove the elimination of chloroform from animals poisoned by chloral. The result was in all cases negative, but if chloroform was at any time administered alone or with the chloral, it could be very shortly found in the breath.

The experimental conclusions of this paper are certainly in accord with every-day clinical teaching, that chloral does not act like chloroform, and that the doses of the two substances are not proportionately the same.

HYDRATE OF CHLORAL IN TRAUMATIC TETANUS.

Dr. Jos. R. Beck reports (*St. Louis Med. and Surg. Jour.*, June 18th, 1872), a successful case of traumatic tetanus treated by chloral hydrate. He discusses at some length the evidence so far adduced in favor of the drug, and gives the following table as a summary.

NO.	REPORTED BY	MODE OF TREATMENT.	Whole No.	Died.	Recovered.
1	W. B. Cluness	Chloral alone	1		1
2	M. Verneuil	Chloral alone	1		1
3 & 4	MM. Dubreuil, Lavaux, and Onimus	Chloral and continuous current	2		2
5	Dr. Dufour	Chloral alone	1		1
6	M. Guyon	Chloral alone	1	1	
7	M. La Fort	Chloral alone	1	1	
8	Mr. Tay	Chloral alone	1	1	
9	E. R. Denton	Chloral, belladonna, and potas. bromid	1		1
10	Thos. G. Duncan	Chloral and Calabar bean	1		1
11	Preston Peter	Chloral and Calabar bean	1	1	
12	John W. Ogle	Chloral, belladonna, and ice to spine	1		1
13	Mr. Croft	Chloral alone	1		1
14	Mr. Paget	Chloral alone	1	1	
15	J. Suydam Knox	Chloral alone	1		1
16 to 22	C. Macnamara	Chloral alone	7	6	1
23 & 24	M. Garnies	Chloral alone	2		2
25 to 34	Dr. Widerhofer	Chloral alone	10	4	6
35	F. Auchenthaler	Chloral alone	1		1
36	My own case	Chloral alone	1		1
	TOTALS.		36	15	21

Chloral in Traumatic Tetanus.—Dr. Lavo relates (*Annali Universali di Med.*, Feb.) three cases of severe traumatic tetanus which

were successfully treated by means of chloral aided by the employment of the cold bath. The quantity of chloral used during the course of the first case amounted to 240 grammes, with twenty-five baths; in the second to 147 grammes, with fifteen baths; and in the third to 140 grammes, with eleven baths.—*Med. Times and Gaz.*, March 30, 1872.

BROMAL HYDRATE.

In the *Journ. de Bruxelles*, April, 1871, Berti and Namias arrive at the following conclusions as the results of an experimental study of Bromal hydrate.

First—Even in small doses, administered in weak solution, it causes burning in the throat, pyrosis, vomiting, and diarrhœa.

Second—In emulsion (1 : 300) it is most endurable, but yet after a time, if repeated, produces vomiting and purging.

Third—Even in relatively large doses it does not produce sleep or quietude. In epilepsy it is of but very little use.

Fourth—Subcutaneous injections cause abscesses and exert no perceptible influence on the nervous system.

Fifth—Rubbed up with a fat and applied to the skin it produces an erythema which is accompanied by a deep inflammation of the cellular tissue.

Sixth—As a caustic it has no advantages over those in common use.

Seventh—Toxic doses produce stupor, paresis of sensation and motion, and rapid or gradual cessation of respiratory movements.—*Schmidt's Jahrbücher*, April 18th, 1872.

MONOBROMATE OF CAMPHOR IN DELIRIUM TREMENS.

Dr. Allan McLean Hamilton, after detailing various treatments he had resorted to to overcome obstinate wakefulness in a case of delirium tremens, says:—

℞. Camphoræ monobromat., ʒ i.; confectio rosæ, q. s. M. ft. massa and divide in pil. No. xij. One pill was given at 12 o'clock, and within a half-hour the patient fell asleep, and slept soundly till the next afternoon, when he awoke refreshed, and drank some beef-tea and milk. At 12 o'clock the same night he took another pill, and slept till 3 o'clock A.M., when another was administered. From this medicine he obtained regular sleep, and awoke always bright and refreshed. No bad effects followed, even when he took ten grains. His appetite is restored, and his nervous system seems to have experienced

a complete rest and invigoration. I have tried this remedy in chordee, and am convinced it excels any combination of camphor and opium, or any of the usual medicines administered in this complication. The high price will prevent it from being used as freely as some other medicines, as the chemists who manufacture it declare that the combination of the equivalents, camphor and bromide, in nearly every instance is attended by spontaneous ignition.—*New York Med. Journ.*, July, 1872.

Brominated Camphor.—Prof. Deneffe, of Ghent, says (*Presse Méd. Belge*) that he has for more than two years used a combination of camphor and bromine, to which he calls attention. It is known that bromine and camphor unite at ordinary temperatures, but the product is decomposed by exposure. This compound Prof. Swarts, of Ghent, has shown, when heated in a closed vessel, is resolved into hydrobromic acid and a crystalline monobromized camphor, *i. e.*, camphor with one atom of hydrogen replaced by bromine. Its fusing point is 76° C., and its boiling point 274° C.

Prof. Deneffe has prescribed it in the form of pills, seventy grains in thirty pills, of which he gives one every four hours till twenty have been taken; the dose afterwards increased. He finds it an excellent sedative to the nervous system, and has used it with much success in delirium tremens.—*Birmingham Med. Rev.*, April, 1872.

Chloral-Hydrate in Spasmus Glottidis.—[*Jahrbuch für Kinderkrankheiten*, 4. II., 1871.]—Dr. Rehn treated a threatening case of spasm of the glottis, in which the attacks were very severe and frequent, with chloral-hydrate. The attacks were perceptibly lessened and finally quieted. The child thus treated was seven months old. The medicine was well borne, and produced no disturbances of digestion.

Swinging in Phthisis.—The effect of swinging seems to have been observed long ago. George F. Elliot, M. D., states that, in the year 1785, one Dr. Smith, F.R.S., tried the effect of swinging on fourteen consumptive patients, at the Middlesex Hospital. It was practised twice a day, for half an hour at a time. On two of the patients it seemed to have but little effect; in the remainder the pulse fell from eight to fifteen beats per minute. His conclusion is, that "the motion of swinging has often a very sensible and immediate operation on the heart and lungs, as it reduces the frequency of the pulse, lessens febrile heat, suspends or prevents coughing, and promotes expectoration."—*New York Medical.*

ON THE TREATMENT OF ASTHMA.

Mr. George Gaskoin, Surgeon to the British Hospital for Disease of the Skin, says in the *British Medical Journal*:—

In the summer of 1870 I was summoned to a lady suffering from an acute asthma, to frequent attacks of which she was subject. Nothing had been omitted in her previous treatment, which was simply palliative. She was recognized as constitutionally asthmatic, and little hope was entertained of permanent amendment. The asthma first occurred on the subsidence of nervous symptoms a few years previous. It had not, as far as I am aware, any organic basis. There was observable on the legs an eczematous eruption. I directed that the chloroform liniment of the *British Pharmacopœia* should be briskly rubbed into the chest for an hour's space, if possible; and this was done daily by a very efficient attendant, who had sufficient intelligence to comprehend and carry out the treatment. Very early much relief was experienced. On the return of her physician to town at the end of three days she was already so much changed for the better that he directed the treatment to be continued. From that time it consisted in the daily repetition of the rubbing process for a month or nearly so, without aid from medicine, and with little restriction to diet. Beyond the information I received that she was daily improving, I had really little or nothing to do with her professionally after one or two visits. Under the hands of her attendant she speedily got rid of the asthma. The patient went out of town in the autumn and enjoyed perfect health and spirits. She took much walking exercise, with exposure, in the cold of the ensuing winter; and, what is very singular, two years have since elapsed with no return of the asthma.

Before giving directions as to how this treatment should be carried out, I will speak as to the *rationale*. Counter-irritation, especially by blister, issue, and moxa, are of such well-established repute in the treatment of asthma that I need not dwell on them; but, besides this, a jolting vehicle, anything that leads to displacement of the air stagnant in the vesicles, is proved to give relief in many instances. I should advise, then, that the frictions should be made with such roughness as the case admits. Slight blows with the palm of the hand or the end of a towel on the ribs are quite allowable; and the friction should be extended to the front of the neck at the lower part, where the vagi enter the chest. I do not think that the composition of the liniment need trouble us, provided it be warm and work easily. Anything like Roche's embrocation would answer very well.

I am not without some experience of asthma, and I am persuaded that the present method will be found a valuable addition to our thera-

peutic means. If proved not to be novel, it must be conceded that it has fallen into utter neglect.

Treatment of Hemorrhoids.— Hemorrhoids, connected with prolapsus, were successfully operated upon by the application of nitric acid some thirty years ago by Dr. Houston of Dublin. The method found great favor at the time, but has been somewhat displaced by the ligature, and the section followed by the actual cautery. Billroth, of Vienna, has of late revived Houston's operation, and reports excellent results, especially in those cases where frequent and dangerous hemorrhage had occurred.—*Lancet*, June 1, 1872.

TREATMENT OF DIARRHŒA AND INTESTINAL HEMORRHAGE OF TYPHOID FEVER.

In a clinical lecture, published in the *Lancet* of June 29, Sir William Gull says, *inter alia:* Medicines are only required for special conditions: for instance, if diarrhœa occur, some would give what is called "chalk mixture;" but we must remember that this has to go through about twenty-five feet of intestine. The best thing is to fill the rectum with five or six ounces of starch; it is not even necessary to put any opium with the starch. The diarrhœa only takes place when the rectum, sigmoid flexure, or descending colon is affected or irritated by acrid matters; hence, if you fill these the contact of noxious matters is prevented, and the diarrhœa checked. Time would not allow of more being said on this. If hemorrhage occur, many would give gallic acid, or tannic acid, or lead, or some powerful astringent. But do not so; "don't begin with all your great guns at once." It is best to trust to the hemorrhage to cure itself, which it will do, and keep the patient at rest in the horizontal posture, giving a little opium (half a grain) by rectum or mouth if necessary to quiet the intestines. Ice may also be applied to the abdomen. This is sound advice, although it may appear terrible. The objection to giving lead or gallic acid or other powerful astringents is that they are apt to make the patient sick, and in that manner perhaps to make the hemorrhage worse.

A New Method of Nourishing by the Rectum.—Dr. W. O. Leube states that he, after long experimenting, has perfected a method of feeding by the rectum much superior to the old plans, so that he has been able to support a patient for a month, to whom no food whatever was given by the mouth. The injection causes no pain, but rather a general feeling of *bien-faisance*. The preparation is made as

follows:—The pancreas of swine or cattle is carefully cleaned of fat, and 50 to 100 grammes thereof cut into very small pieces. In like manner 150–300 grammes of beef are prepared. Both substances are then put in a dish with about 50 to 150 cc. of lukewarm water, and stirred into a thick paste, and drawn in a clyster-pipe with wide opening. In many cases to the mixture from 25 to 50 grammes of fat may be added, also at times some starch. An hour before using this clyster one of pure water should be administered to clean out the small intestines.—*Deutsches Archiv für klinische Medicin*, March 15, 1872.

The Employment of Caustics in the Amputation of Limbs. M. le Dr. Aubert describes (*L'Abeille Médicale*, June 17; from *Le Lyon Médical*) a method of amputating limbs and of removing tumors by the use of caustics. He uses for this purpose a leaden pipe seven millimetres in diameter, from which he removes a portion of the circumference, so as to transform it into a trough. It is then filled with caustic, and accurately adapted to the periphery of the tumor or to that of the limb to be removed. In some cases these pipes may be passed into the tissues themselves, after the manner of the drainage-tubes of Chassaignac, and in this way the constriction of the tumor or of the limb may be made more complete. The caustic which Dr. A. prefers is the *pâte de Canquoin*.

Creosote in Epithelioma.—In the *Montpellier Médical* for February, 1872, Doctor Forné reports a case, which he believes to have been epithelioma of the lip, cured by the free local use of pure creosote (carbolic acid ?).

Hypodermic Injections of Vaccine Lymph in Small-Pox.—Dr. Robt. Grieve has tried this method, that of Mr. Hurley, somewhat extensively, and found it useless.—*London Lancet*, June 29, 1872.

A New Method of Feeding Patients with Wound of Throat.—Mr. I. B. Scriven, having a patient who had received a wound opening the pharynx, and separating the hyoid bone and thyroid cartilages, performed tracheotomy below the original wound, and inserted an elastic catheter into the œsophagus through the latter. The patient soon discovered that on putting the open end of this tube into any liquid, the latter was rapidly drawn into the stomach, without any voluntary effort of her own. In this way, whilst calmly breathing through the tracheal tube, she would drink up a pint of soup, at first in ten minutes, afterwards in three.—*Indian Med. Gazette.*

Tetanus Treated by Bromide of Potassium and Chloral.—In the *Edinburgh Medical Journal* for July Mr. A. Ferguson reports a successful case of traumatic tetanus. The man took for four weeks 120 grs. daily of chloral and 90 grs. of bromide of potassium (3,600 grs. of the first, 2,700 grs. of the last in all), without appreciable effect on the general system beyond transient loss of memory and the ordinary manifestations attending intoxication.

Bromide of Potassium.—It has been said that the prolonged use of bromide of potassium was injurious to the economy in many ways—notably that it caused loss of memory, diminished the appetite, reduced the weight of the body, and even predisposed to phthisis. With a view of satisfying themselves on these points, the following observations were made by the medical officers of the Sussex County Lunatic Asylum, Haywards Heath. Ten patients, four females and six males, were ordered the bromide, in doses varying from twenty to forty grains, three times a day. Their weights were taken weekly, and the effects carefully noted. It would appear from the observations that, when the bromide is given in doses not exceeding one drachm daily, it almost invariably increases the weight of the body; and that even where this dose is doubled the weight need not necessarily diminish, but rather that the chances are in favor of its increasing. The appetite was never impaired, and the functions of the secretory and excretory systems were not perceptibly affected in any instance. As regards the alleged failure of memory, no opinion could of course be formed from observations derived from insane patients; but the medical officers from whom we are quoting state that they have not, in their experience of the remedy, had any evidence in support of such a view.—*Lancet*, April 20th, 1872.

Treatment of Diphtheria by Inhalations of Sulphur.—Dr. Kieser, in the *Würtemberg. medicin. Correspond.-Blatt*, 1871, No. 35, recommends strongly the treatment introduced originally by M. Barbosa. Three times a day he blows the commercial flowers of sulphur, by means of a little cone of paper (lamplighter), whose bent end is charged with the drug. He states that ordinarily three to six insufflations are sufficient, in cases seen early, to cause the disappearance of the deposit, and the cure is complete in from eight to ten days. In neglected cases nine to twelve applications are requisite, and the cure requires twelve to fourteen days. In most cases the nurses can be readily taught to practise the insufflations. In young infants a glass tube with one end fine and bent, and the other armed with an india-rubber bulb, may be substituted for the paper.—*Revue de Thérapeutique Med.-Chir.*, May 15, 1872.

Intussusception.—Dr. Taliafero reports, in *The Western Lancet*, a case of supposed intussusception. For two days, he says, I tried the most active purgatives and enemata without any effect; remedies were also used for allaying spasm of the bowels; she suffered intense pain over the whole abdomen, but there was no vomiting. A pint of water with two drachms of soda, and the same amount of water with a drachm of the acid, were alternately introduced into the rectum. In an hour there was a copious evacuation from the bowels, and the woman had no further trouble.

Eucalyptus—its Medicinal Virtues.—David Wooster says (*Pacific Med. and Surg. Journ.*):—I have now used some gallons of this extract during a period of eight months in the U. S. Marine Hospital, and am surprised at its uniform and reliable effects in affections for which it is suitable. It is a diuretic of rare virtue, and may be administered when most of the diuretics now in common use are inadmissible. It is an aromatic tonic, and has notable restorative effects in low states of the system, as in typhoid fever, typhoid diarrhœa, and dysentery.

In vesical catarrh it alone cures. In spasmodic stricture it relieves with great promptness. In all affections of the mucous membranes its beneficial action is remarkable. I have treated many cases of acute gonorrhœa with no other remedy. In syphilis it is not useful. It is not antiperiodic. It is very useful externally in chronic ulcers.

Hypophosphites in the Toothache of Pregnancy.—Dr. Sterling believes that the toothache so common in pregnancy results from the abstraction from the blood of the salts requisite for the construction of the bones of the fœtus, and accordingly recommends one and a half grains of hypophosphites of lime, soda, and manganese, daily.—*Nashville Jour. Med.*

Morphia and Chloral.—Dr. R. H. Fisher speaks very highly of the combined use of morphia and chloral for relief of pain.—*Med. News*, July, 1872.

Injection of Morphia before the Inhalation of Chloroform.—MM. Lubré and Guyon recently read a paper before the French Academy, in which they, as the result of four trials, conclude that: We—as M. Claude-Bernard has shown can be done in animals—obtain anæsthesia much more rapidly by combining the action of chloroform and morphia; secondly, that this anæsthesia is of longer duration, and may be kept up by smaller doses of chloroform, the risks of fatal accidents being thereby considerably diminished. They suggest

also that the quantity of morphia injected may be somewhat larger than that which they employed, and that the injection might be conveniently practised a longer time before the operation.—*Med. Times and Gaz.*, March 23, 1872.

Liebreich's Chloride of Æthyl.—This substance was used instead of chloroform in Langenbeck's wards in 1870, and with the best results. It gave rise to no vomiting; sleep was induced easily, but was less profound than with chloroform. Of course it was expected that the latter would soon be superseded, and that the chloride would prove quite innocuous; but a death under its influence, which lately occurred, proved that absolute safety in the use of anæsthetics has not as yet been obtained.—*Lancet*, March 16, 1872.

Tracheotomy by the Galvano-Caustic.—In the *Revue de Thérap. Med.-Chirurg.* of May 15 is contained the account of a discussion, in the French Academy of Medicine, on the successful cure of tracheotomy, performed by Dr. Jaubert, in which the galvano-caustic was used.

A Simple Substitute for the Poultice.—Apply thick wet cloths as dressing and cover with *waxed* paper. Greased paper answers this purpose pretty well also, and can always be readily obtained.

To stop the Bleeding from Leeches.—Make a ball of cotton about the size of a pea; put this pellet of cotton or lint upon the wound; press it down firmly; keep up the pressure for a quarter of an hour. Remove the finger cautiously, taking care to let the pellet remain.—*Druggists' Circular.*

Quinine in Cholera.—Professor Bolkin, in the cholera epidemic which took place in St. Petersburg in 1871, made use of the sulphate of quinine, which he administered in doses of 20 to 30 centigrammes at a time, three or four times a day, and even more frequently if the substance was vomited; in many cases he also made use of a subcutaneous injection of the remedy. After using this remedy the mortality among his patients fell to 17.3.—*The Doctor*, April 1, 1872.

Nitrate of Silver in Bed-Sores.—Betz regards nitrate of silver as the best remedy for bed-sores. Instead of making use, however, of lint dipped in the solution of lunar caustic, he prescribes an ointment composed of five decigrammes of the nitrate of silver, fifteen grammes of lard, and thirty of wax; which he spreads on linen and applies to the sores, taking care that the piece is rather larger than the sore. This is repeated morning and evening.—*The Doctor*, April 1.

Arrest of Epistaxis.—M. le Docteur Marin, of Geneva, recommends, for the arrest of epistaxis (*Journal de Méd. et de Chir. Pratique*, May, 1872), the compression of the facial artery as it runs over the superior maxillary bone near the nose.

A New Preparation of Mercury.—Prumers, of Berlin, desires to introduce ethyl-sublimate or ethyl-chloride of mercury into therapeutic use. After some experiments on animals, he tried it in some syphilitic eruptions by injecting subcutaneously a solution containing one-tenth to one-fifth of a grain; ten to twenty injections suffice. The injections produce scarcely any pain, and no appreciable infiltration or induration of the part, presenting a marked contrast to the injection of corrosive sublimate. There is no disturbance of the digestive organs or salivation. He has also administered the agent in form of pill, the dose being half a grain to a grain night and morning. In this case also there were no unpleasant results.—*Medical Press and Circular*, June 12, 1872.

Bromide of Quinine in Syphilis.—In the *American Practitioner* for July Dr. David W. Yandell confirms Dr. Richardson's statements of the value of the bromide of quinine in chronic advanced syphilis, reporting a number of cures effected by its use. He gives it in doses of two to four grains three times a day until cinchonism is induced, and then in smaller quantities. About three months' treatment appears to be generally required.

A New Way of Combating Muscular Spasm.—M. Broca proposes (*Lyon Médical*) pressure upon the main artery, and consequent partial interruption of the circulation, as a means of combating the muscular spasms which are often troublesome after fractures have been set.

Carbolic Acid in Hydrocele.—In the *American Practitioner* for July Dr. P. E. Sandidge reports a case of double hydrocele cured by injections of two drachms of Calvert's solution of carbolic acid (No. 5), with a small quantity of water, after the failure of tincture of iodine.

Wahoo (Euonymus Atropurpureus) in Chronic Intermittent.—Dr. C. Richmond commends the wahoo in cases of chronic intermittent, especially when there is enlargement of the spleen and dropsy. He says: My manner of using this remedy is in the infusion of the fresh bark. The "fluid extract" I have never found to be as reliable. Two ounces of the fresh bark of the root to one part of water, poured upon it boiling hot and allowed to steep some time; of this,

from half a pint to one pint should be given each day. Drunk warm and in ℥ ij. doses every hour or two, it will generally procure several large watery alvine evacuations. Taken in half the quantity, or every three or four hours, it will act as a diuretic, and should be continued for days, if necessary. I generally give the remedy until it purges at first; then as a diuretic and tonic. Quinine can be given at the same time.—*Indiana Journal of Medicine.*

The Thirst-Cure.—In the *All. Milit.-Ztg.*, 1871, Dr. Pimser says that the result of the thirst-cure in pleurisy is very favorable; and in comparison with all methods of treatment hitherto employed it is very certain and rapid, and hence it is especially useful in hospitals and for persons who are peculiarly anxious to get well rapidly on account of their condition. The cure is commenced immediately after the cessation of the symptoms of pyrexia, that is, the inflammatory stage, since by quickly carrying out the process of sucking up of the exudation, the deposit of fibrinous bands and the occurrence of false membranes is hindered, and a complete recovery of the compressed lung takes place. The cure is certainly a heroic one, but is not at all dangerous to the constitution, even in delicate and emaciated persons, and even not in the cases where pyrectic symptoms still exist when the cure is commenced, since these are alleviated by means of it. If no symptoms of resorption occur during the cure we may in great probability diagnose that there is pus present in the exudation, even though no symptoms betray this. In fact this treatment is not dangerous for the organism, and the patient picks up after it very rapidly.—*The Doctor*, April 1.

Treatment of Venereal Ulcers.—By Dr. Hemard.—In the *Med.-Chirurg. Centralbl.*, 1871, Dr. Hemard asserts that for the last twenty years he has obtained the cure of soft and hard sores by simply irrigating the parts with cold water. A vessel of cold water is fixed to the walls of the room, at such a height that the water which comes from it through a tube attains a certain force of projection. The patient has no more to do but to wash his ulcers every three or four hours under this stream; in a few days the ulcer becomes clean, and quickly heals. All other treatment is superfluous. In ulcers of the prepuce, which are out of sight, after irrigation a little starch flour is introduced. When the superficies of the ulcer has lost its characteristic aspect, a stratum of collodion is painted on it, and it soon heals.—*The Doctor*, April 1, 1872.

Incontinence of Urine.—In the *Atlanta Med. and Surg. Journal* for May, 1872, the repeated use of large steel bougies is

highly commended in puerile incontinence. The treatment is believed to afford relief by obtunding the urethra.

Cotton Wool as a Dressing.—Dr. Wm. Warren Greene commends cotton wool very highly as a dressing for wounds. He uses it in a way similar to that of M. Guérin.—*Boston Med. and Surg. Journal*, May, 1872.

Abdominal Aneurism Cured by Aortic Compression.—In the *London Lancet* of April 20 Dr. Walter Moxon reports a case of abdominal aneurism cured by Mr. Durham and himself, by compressing the aorta on the proximal side by means of Lister's abdominal tourniquet, the pad of which was adjusted and screwed down until all femoral pulsation ceased. The compression was steadily maintained for ten hours and a half, the patient being kept under chloroform. No severe constitutional or local symptoms followed. The aneurism after a few hours commenced to pulsate anew, but remained smaller and harder, and gradually grew smaller, so that at the end of a month all pulsation had ceased in it as well as in the femoral. The patient recovered health and strength.

Chloral in Hydrophobia.—In the *London Lancet* of April 20, I. D. Sainter reports a case, which he considers to have been hydrophobia, cured by the free use of chloral.

Extract of Nettles.—In *London Lancet* of April 20 is a partial report on the use of extract of nettles in whooping-cough, in which is detailed a case where the drug produced a peculiar erysipelatoid inflammation.

Carbolic Acid in Whooping-Cough.—Dr. C. Glen Bott has found carbolic acid to have wonderful power in arresting whooping-cough. He gives $\frac{1}{24}$ to $\frac{1}{36}$ of a drop freely diluted with water every four hours to a child eight years old, or in some cases $\frac{1}{8}$ of a drop three times a day to a child four years old.—*Medical Times and Gaz.*, June 29, 1872.

Carbolic Acid as a Local Anæsthetic.—Dr. A. H. Smith confirms (*New York Med. Journ.*) the value of carbolic acid as a local anæsthetic. He painted a spot on the forearm, about an inch in diameter, with carbolic acid of about the strength of 85 per cent. For about a minute there was a slight burning sensation, after which the integument became entirely insensible, the cuticle being whitened and shrivelled, and the spot slightly elevated. He then made an

incision without feeling it. The capillary circulation seemed not to be materially interfered with, as the blood flowed as freely as it would from a similar wound under ordinary circumstances. The reparative process was also not impaired, adhesion taking place immediately. Three hours after the application of the acid a needle could be thrust freely into the skin without causing pain.

Again carbolic acid was applied as before, and ten minutes after a fly-blister was placed upon the spot. The blister remained eight and a half hours without causing any pain, and without producing vesication.

He has also used the acid in this way successfully in opening superficial whitlows, and further commends it in the form of spray in persistent bronchial irritation.

He finally suggests the use of a strong solution of carbolic acid as a revulsive, in cases in which a continuous impression is desired. While causing but little suffering, it produces an intense hyperæmia of the skin, which persists for eight or ten days, and is followed by desquamation of the cuticle.

Nitro-muriatic Acid in Cirrhosis of the Liver.—Dr. J. H. Kidder, U. S. N., commends most highly (*Western Lancet*, May, 1872) nitro-muriatic acid used externally in cirrhosis. He says, *inter alia*:—

"The acid should always be made extemporaneously by adding to five parts, by volume, of strong hydrochloric acid, three parts of nitric. The additions must be made gradually, shaking the bottle well each time. After the acids have been well mixed, the bottle or jar should be left unstoppered for twenty-four hours before use. Three (3) fluid drachms of this acid, diluted with one pint of water, form a lotion, which is to be applied over the region of the liver twice a day, with *brisk friction*, while at the same time the feet are immersed in a bath of the same. The hands of the attendants making the application should be protected by oiled silk gloves, else, as stated by Inspector Martin and verified by my own experience, bilious diarrhœa will result to them, from absorption of the acid through the palms of the hands. If the practitioner please, he may give the acid internally, in the usual doses, but I have found its administration in this manner not effective, and very likely to disturb the already vitiated processes of digestion.

Nitrite of Amyl in Puerperal Convulsions.—Dr. Wm. F. Jenks reports a case of puerperal eclampsia, in which nitrite of amyl arrested at once the convulsions, but the inhalation was fol-

lowed by frightful hemorrhage. Dr. Jenks, commenting on the case, says: First of all, there exists during gestation hydræmia, producing thereby an increased vascular tension, giving rise in some cases to symptoms such as were present in this patient during the latter months of gestation. At the time of labor, the intra-cerebral vascular pressure is increased to such a degree that a serous exudation takes place, producing œdema of the brain-tissue and dropsy of the membranes. As the result of this *extra*-vascular pressure, a condition of secondary anæmia is mechanically brought about. This it is which produces the eclamptic spasm, each one of which bears with it new danger to the patient, viz.: an increase in the amount of the exudation, resulting finally in an œdematous imbibition of the nervous centres, which is fatal. Not only in the brain, but also in the lungs is this increased vascular tension productive of mischief, for some cases which survive the convulsions die after labor of œdema of the lungs. Hence the diminution of this vascular tension becomes an *indicatio vitalis*. The lancet is the readiest means, but the relief is not always immediate; a certain amount of time is requisite to regulate the new conditions of intra-vascular pressure, and any agent which will rapidly diminish this tension of the vessels will, *à priori*, check the imminent spasm and abort the attack.

This is the first action of the nitrite of amyl, and this property led Dr. S. Weir Mitchell to suggest its use to me in cases of puerperal eclampsia. In this individual case its action in arresting the spasm was immediate and satisfactory. Its use carries with it, I fear, however, a certain amount of danger. It relaxes also the muscular system, and the profuse post-partum hemorrhage I had to deal with after the uterus had once firmly contracted may perhaps have had its origin in the use of this drug.

(Physiological teachings certainly indicate that the inhalation of nitrite of amyl after delivery must of necessity cause flooding.—Ed. N. R.)

Method of Disinfecting.—Dr. Clemens (Frankfort O. M.) highly recommended burning a spirit-lamp containing chloride of copper in the hospital wards. It must not be used in excess, on account of the irritating effects on the throat, eyes, etc. His formula is:—

℞ Liq. cupri perchlor. conc. ..... ʒ ij.
Chloroformi ..... ʒ i.
Spirit. vini ..... ʒ vj.

This is put in a common spirit-lamp containing a wick, and allowed to burn two or three times a day, five or eight minutes each time.—*Detroit Review of Medicine.*

Treatment of Buboes.—Dr. R. C. Brandies, in a letter to the *Richmond and Louisville Medical Journal* from Vienna, says that Professor Zeissl, the Chief Physician of the Second Division for Syphilities in the Vienna General Hospital, has had marked success in treating acute and subacute inguinal and femoral buboes with acetate of lead. This treatment has now been carried on in the following manner for the last two years: If, after the first examination, it may be hoped that the integument covering the glandular enlargement can be saved, it is thoroughly washed and cleansed of all foreign matter adhering to it. The patient is put to bed, and a compress, soaked in a solution of the acetate of lead, is applied to the swelling. The compress is moistened from time to time, so that the bubo is always bathed with the solution. After three or four days the skin covering the swelling is already considerably thickened and toughened. If any fluctuation be noticeable at the beginning of treatment, we generally find that it gradually disappears, and that the swelling acquires a doughy consistency. Should the pus increase in quantity, a vertical incision with a bistoury is made into the mass, care being taken that the wound be not too large, as it is desirable that the contained matter should escape but slowly. This evacuation is promoted by the application of the moist compress, which is held in apposition with the diseased parts by means of a spica bandage.

Treatment of Articular Rheumatism by Ice.—In the *Gaz. Méd. de Strasbourg*, February, 1872, we notice that Dr. Esmarch published in the *Langenbeck's Archiv*, about 1861, some observations on this subject. In the past winter there presented themselves in the ambulances four cases of acute rheumatism, which were treated by means of ice alone. In the first there was great pain in the joints of the feet; during the day the affection extended to the knee-joints, where ice was locally applied. On the morrow the superior extremities were also affected with pain, the pulsations of the heart were weak, and the first sound accompanied by a murmur. All the painful articulations were covered with bladders containing ice. On the fourth day the pain had almost disappeared; on the fifth the pulsations of the heart were normal; on the sixth there were no longer any local symptoms; on the seventh the fever had ceased.

Two other cases were similarly followed by equally favorable results in the space of four days. In a fourth case ice was not used until the fifth day, but in four days after this the pain had disappeared with all other symptoms. Before the ice was applied the temperature increased gradually, but after its application it gradually became lowered. The author says that he would not hesitate to use ice even in cases of gout;

and as to the metastasis of rheumatism to the brain, he considers this to be the effect of the temperature. At Kiel there was received into the hospital a patient with rheumatic delirium, and with a temperature of 43° C. He was immersed in water, and a cure took place. The application of ice should be continued until all symptoms disappear. The author is convinced that when the prejudice against the use of ice is overcome, it will be used often in acute joint-affections. Ice-bladders should be used, and not cold compresses, as Priessnitz did.—*The Doctor.*

Hydrochlorate of Ammonia.—Dr. Spencer Thompson says, in the *British Medical Journal*, that he has found this one of the most efficient remedies in portal dropsy, in scruple or half-drachm doses, tolerably diluted, every six or eight hours.

A Simple Method of Arresting Epistaxis.—Dr. Roland G. Curtin says (*Phil. Med. Times*), Dr. Albert H. Smith, in order to soften the nasal mucus of children in the nostrils, recommends the introduction of lard upon a small roll of fine linen wrapped like an ordinary lamplighter.

It occurred to me, in a case of epistaxis, that a similar roll of paper, moistened with water and coated with the dry tannic acid, inserted into the nose, might be of service. I tried it, with immediate success.

I have since found that old linen answers the purpose better than paper applied as above, as it makes a better carrier, being softer, more flexible, and less liable to break down through excess of moisture. I have also found that the powder adheres better if soft lard be used instead of water.

I have tried this repeatedly with uniform success, and believe, if it were resorted to, that the disagreeable operation of plugging would seldom be found necessary.

MATERIA MEDICA.

DETECTION OF ADULTERATION OF OIL OF EUCALYPTUS.

BY H. DUQUESNEL.

THERE are four adulterations practised:—

1. By alcohol.
2. By fixed oil.
3. By oil of turpentine.
4. By another volatile oil, as of copaiba, decolorized, and, as far as possible, deodorized.

1. To detect alcohol, mix the suspected oil with its bulk of water in a graduated tube, and agitate. On standing the liquids separate, and the increase of bulk in the water indicates with sufficient accuracy the amount of alcohol present.

Fuchsine, or aniline, affords a still better test for very small quantities of alcohol, for if the latter be present the liquid acquires a more or less deep red color, according to proportion of the alcohol; if it be absent the original color is maintained.

2. To detect a falsification by a fixed oil: Drop on paper in the usual way, or distil a little of the oil on water.

3. Oil of turpentine.—Even as much as twenty-five parts in one hundred of the oil of turpentine may be added to the essential oil of eucalyptus without being perceptible to the smell, and hitherto no good method of detecting the adulteration has been devised.

After stating that neither density nor effect of polarized light is of avail in detecting this fraud, M. Duquesnel says that the boiling-point may be used, and gives the following table:—

		Impure oil.				
Pure non-rectified oil.	Pure rectified oil.	5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
169°–171°	169°–171°	169°	168°–169°	167°–168°	167°	166°–167°

To detect the oil of turpentine in this way requires, however, a certain amount of practice, besides a very sensitive thermometer, or a little distillatory apparatus, composed of a small tube, in the bottom

of which is placed one or two cubic centimetres of the suspected essence. This tube is so arranged that a thermometer fixed in the cork that closes the orifice of the tube, will be bathed only in the vapor escaping through a small tube set in the cork.

A more easy method is offered by the chemical reactions of iodine. The oil of turpentine, treated with iodine, gives origin to a slight explosion, accompanied by the disengagement of purple vapors. Oil of eucalyptus has not this property. The following table indicates the sensitiveness and value of this test:—

Powdered iodine, 0.15. Oil, 3 drops.

Pure oil, non-rectified.	Pure oil, rectified.	Impure Oils.				
		5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
None.	None.	Evident explosion.	Explosion more pronounced.	Explosion still more pronounced	Explosion more violent.	Explosion violent.

Still another and more rapid and surer means of detecting the turpentine is by examining the solubility in alcohol. The strength of the latter should be 73 degrees, at a temperature of 14° (C.). To dissolve one cubic centimetre it is necessary to add of the alcohol—

	Pure oil, non-rectified.	Pure oil, rectified.	Impure oil.				
			5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
Alcohol,	1.6 cc.	1.6 cc.	1.90 cc.	4 cc.	6.5 cc.	14. cc.	16. cc.

4. Copaiba.—This adulteration is best detected by studying the boiling-point; the temperature at which ebullition occurs being for copaiba 260°; for oil of eucalyptus, 169° to 171°. The solubility in alcohol can also be employed as a means of testing.—*L' Union Pharmaceutique*, March, 1872.

BASIC AND NEUTRAL BROMO-HYDRATES OF QUINIA AND OF CINCHONIA.

BY M. LATOUR.

HEAT in a matrass of glass a mixture of

Bibasic sulphate of quinia	10	parts.
Alcohol at 85°	50	"

then add a solution—

Bromide of potas	8	"
Distilled water	20	"
Diluted sulphuric acid (1 part to 100)	10	"

Boil, and after some minutes filter to separate the sulphate of potassa; wash this salt with hot alcohol, mix the alcohol, concentrate to a very small quantity by heat, and set aside to crystallize. At the end of twenty-four hours remove from the crystals the liquid by bibulous paper; the resultant is a *neutral salt.*

For a *basic* salt the following proportions are used:—

Sulphate of quinia (bibasic)	10 parts.
Alcohol at 85°	50 "
Bromide of potassium	5 "
Distilled water	20 "

Neutral Bromo-hydrate of Cinchonia.—The following proportions are used:—

Sulphate of cinchonia (bibasic)	10 parts.
Alcohol at 85°	50 "
Bromide of potassium	8 "
Water	10 "
Dilute sulphuric acid (1 to 100)	20 "

—*L'Union Pharmaceutique*, May, 1872.

ON THE SOLUBILITY OF SOME SALTS OF QUININE.

In *L'Union Pharmaceutique* (April and May), M. Schlagdenhauffen has an elaborate paper with the above caption, from which we abstract the following table:—

Quantity dissolved in one cubic centimetre.

Name of Salt.	Temperature (C.).		
	30°.	20°.	10°.
Acetate	0.091	0.037	0.027
Chlorohydrate	0.092	0.049	0.031
Hypophosphite	0.12	0.097	0.065
Formiate	0.33	0.296	0.272
Lactate	0.35	0.31	0.29
Sulphomethylate	0.80	0.71	0.60
Sulphovinate	0.80	0.72	0.60

EMULSIONS.

M. Rother has a paper in the *Pharmacist* with the above caption. In it, after some preliminaries, he condemns entirely the process of shaking in a bottle, also that in which sugar, gum, and oil are all rub-

bed together in a mortar, and then water gradually added in small portions, with constant trituration. He then remarks:—

By a third process, devised by Overbeck, given in a note to the U. S. Dispensatory, and also recommended by Mohr in his "Pharmaceutical Technics," a definite quantity of oil, gum, and water, in proportions adjusted according to the nature of the oil that is employed, is all rubbed up at once in a mortar, and, when the proper union has taken place, more water is gradually added. This method is quite good, and yields very few failures, where the oil does not exceed two fluid ounces, but with four fluid ounces of oil in one quantity the process becomes precarious.

A fourth method is given in the U. S. Dispensatory. According to it the gum is first mixed with water, in the same proportion as it exists in the officinal mucilage of the Pharmacopœia; the oil then added, mixed and diluted with the prescribed amount of water. In this case the oil is usually added in a thin but continuous stream with rapid stirring. This process is nearly as good as the preceding one, but often the emulsion is not as perfect as it should be.

These operations have mostly reference to the fixed oils and balsams, and are not equally applicable to the volatile oils, which, as a class, are much more difficult to emulsify. Experience demonstrates that the thicker and more viscid the oil the easier it is emulsified. The volatile oils, owing to their great mobility, are the most difficult to overcome. Castor oil and oil of turpentine are typical of these opposite extremes.

Thus it becomes evident from the disconnection and dissimilarity of these methods, that the true principle upon which the process of emulsification depends has been either entirely unknown or completely disregarded. A perfect emulsion is characterized by its dazzling whiteness, its uniformity, and the property which admits of its dilution to even an extraordinary extent without destroying its appearance or identity. The incipient or complete emulsion, in its most concentrated form, from the moment of its generation, is unmistakably distinguished by its whiteness, and the peculiar tenacity which causes the pestle, when moved through it, to give the characteristic crackling sound of the emulsion; when these indications evince themselves the success of the operation is assured.

Now the writer observed that by following Overbeck's method, and using a broad mortar, if the trituration be confined to a narrow space for a moment until perfect emulsification has taken place, even in a small portion of the material, and then gradually bringing the rest of it within this centre, a perfect emulsion was invariably attained. Applying this manner of manipulation in the process of the U. S. Dispensatory, that is, instead of pouring the oil upon the mucilage in a

continuous stream, adding only a small portion at first; this, with the large proportion of mucilage, never fails to emulsify. The remainder of the oil is then added in small quantities at a time, and each perfectly emulsified before introducing the next. Finally, the perfect emulsion is diluted to the required measure. The writer now further observed that when the proportion of oil was great, in comparison to the mucilage, a time would arrive during the addition of the oil when this ceased to merge with the emulsion; in no instance, however, was the previously-formed emulsion ever disintegrated or deranged. Therefore, it was assumed that the inaction originated in a deficiency of water, consequently this addition was made, and complete emulsification again and immediately resulted. The addition of oil was then continued, occasionally adding water, as the mucilage could at any period of the operation be diluted with water to any desirable volume without decomposition. This principle was now applied to oil of turpentine, assumed to be the most refractory in the category of oils.

Two fluid drachms of officinal mucilage of acacia was placed into a broad, conveniently-sized mortar, and diluted with one fluid drachm of water. Half a fluid drachm of oil of turpentine was then added, and the whole triturated a few moments until the oil was emulsified. One and a half drachms of oil was then added in half-drachm portions, emulsifying each before adding the next: this was followed by one drachm of water. Five fluid drachms of oil was now introduced in the same manner as before, and again followed by half a drachm of water. After this three drachms of oil were again incorporated as above, and still the emulsion retained its perfect appearance, and ever ready to extinguish quantities of oil to an almost unlimited extent. However, this was not required, and therefore the incorporation of oil was here discontinued, and the emulsion diluted with water.

Upon these deductions the following theory is established:—A concentrated, perfect emulsion is in itself the most rapid and efficient emulsifier, and possesses the property of emulsifying oil to an almost unlimited extent.

This theory is expressed in the following rule for the emulsion:—

Introduce the emulsifier into a broad, conveniently-sized mortar; this may be already a perfect emulsion, as the yolk of eggs, but if it is gum this must be in the form of mucilage, either thick or thin, according to the nature of the oil. Now pour in a small quantity of oil, and triturate this with the mucilage until a perfect emulsion has formed, then add the rest of the oil on small portions at a time, and not until the previous addition has been perfectly emulsified, adding small quantities of water at intervals, as the indications may require. Finally, when all the oil has been incorporated, gradually add the pre-

scribed volume of diluent. When both a fixed and volatile oil are prescribed in an emulsion, the fixed oil must be emulsified first before the addition of the other.

In the *Pharmaceutical Journal* of May 25th, Mr. T. H. Hartwick says:—

Mr. Rother has made known a perfect method of preparing an emulsion of turpentine with mucilage, hitherto, at the best, but an unsatisfactory performance; there is, however, one point essential to insure complete success, which has apparently escaped his attention, and that is the use of fresh mucilage.

TO PREPARE EXTRACT OF LICORICE.

R. ROTHER.

Liquid extract of licorice-root is prepared by exhausting the root in coarse powder, by means of percolation, with a menstruum consisting of alcohol $\frac{1}{4}$ or $\frac{1}{6}$, and water $\frac{3}{4}$ or $\frac{5}{6}$, with about 2 fluid drachms of about 16 or 18 per cent. ammonia-water in each pint of the mixture. The percolate is heated to boiling, to precipitate the dissolved albumen, and filtered hot; the residue on the filter is washed with hot water and the filtrate evaporated to half the weight employed. This process may further be stated as follows:—

Take of licorice-root in No. 20 or 24 powder, 32 troy ounces.
Alcohol one pint.
Water sufficient.
Water of ammonia (16 or 18 per cent.), $1\frac{1}{2}$ fluid ounce.

Mix the alcohol with 5 pints of water and add the ammonia. Moisten the powder with six fluid ounces of the mixture, pack firmly in a cylindrical percolator, forming a column of medium height, and pour on the remainder of the mixture, and then water until six pints of percolate have passed; heat this to the boiling-point and filter; when the liquid has disappeared from the surface mix the residue with a pint of water, heat and filter; mix the filtrates and evaporate.

BRANDY FROM WOOD-SHAVINGS.

C. G. Zetterlund has been making some experiments in the distillery at Hulta to make brandy out of shavings. For this purpose they were boiled in an ordinary kettle under a pressure of 0.116 kilo-

grammes of steam to the square centimetre. There was then put into the kettle:—

Shavings (pine and fir, very wet)	9.0 cwt.
Sulphuric acid, 1.18 sp. gr.	0.7 cwt.
Water	30.7 cwt.
Total	40.4 cwt.

After boiling eight and a half hours the mass of shavings contained 3.33 per cent. grape-sugar, and after eleven hours' cooking 4.38 per cent. A further increase in the quantity of sugar could not be attained. There was attained in all, from the 40.4 cwt., about 1.77 cwt. of grape sugar, or about 19.67 per cent. of the weight of the shavings. The acid was neutralized by lime, so that the cooled mash ready for fermentation contained one-half degree of acid, according to Luders-dorff's acid tester. The mash had a temperature of 30° C. when the yeast, prepared from only 20 pounds of malt, was added. At the end of ninety-six hours the mash was done fermenting, was then distilled, and yielded 61 quarts of 50 per cent. brandy at +50° C., perfectly free from all smell or flavor of turpentine, and of a very pure taste. It is more than probable that the manufacture of brandy from shavings on a large scale would succeed if it were ascertained by experiment with how much water the acid must be diluted and how long it must be boiled; for both of these circumstances exert a great influence over the production of the sugar. If it were possible to convert the whole of the cellulose in the shavings into sugar, each hundred weight of air-dried shavings would yield about seven gallons of brandy of 50 per cent. The shavings of the leaf-bearing trees would probably give the best results.—*Jour. of App. Chem.*

SOLUBILITY OF BISULPHIDE OF CARBON IN WATER.

F. Sestini (*Gazet. Chim. Ital.* in *Jour. Chem. Soc.*) states that carbon bisulphide is not quite insoluble in water. After several days' contact, at ordinary temperatures, water takes up about one part in 1,000 of its weight of this compound, a very small quantity at the same time undergoing decomposition. The aqueous solution, when distilled, gives up the carbon bisulphide unaltered, at the commencement of the distillation. It has the odor of the compound, a slight burning taste, and does not contain more than 0.002 gram. of hydrogen

sulphide in a litre. With regard to reactions with the hydrates of the alkaline earth, it is said that when a mixture of water, calcium hydrate, and carbon bisulphide is exposed to the action of solar light in summer, the liquid in six or eight hours acquires a fine yellowish-red color, and during the following night deposits a few very fine prisms of orange-red color. The same reaction takes place in two hours when carbon bisulphide is heated to about 50° with milk of lime. The liquid, filtered while hot, does not deposit any crystals on cooling, but, on adding calcium hydrate to the cooled filtrate, it yields the prismatic crystals above mentioned. These crystals consist of a compound of hydrate and sulpho-carbonate of calcium.

OBSERVATIONS ON TESTS FOR QUININE AND MORPHINE.

BY PROFESSOR FLÜCKIGER.

The most characteristic test for ascertaining the presence of quinine is the formation of the splendid green compound called *Thalleiochine*, which is produced if solutions of the alkaloid or its salts are mixed with chlorine-water and then a drop of ammonia added.

It is known by Pelletier's researches that some other akaloids are also altered by the above treatment, yet without assuming the same colorations. Morphia, for instance, shows a red hue, very quickly turning dark brown.

I was induced by a lamentable poisoning case to examine the behavior of the two alkaloids when mixed. The first question was to ascertain the smallest quantity of *quinine* which, in solution, displays the green color. If one part of quinine is dissolved into 4,000 parts of acidulated water and then about $\frac{1}{10}$ of the volume of the liquid of chlorine-water and a drop of ammonia added, a green zone will be readily formed if the liquids are cautiously placed in a flask without shaking. If the solution of quinine contain no more than $\frac{1}{5000}$, the green zone may still be obtained, but in more diluted solutions the success becomes more and more uncertain. From a practical point of view we may state that $\frac{1}{5000}$ of the alkaloid is the smallest quantity whose presence can thus be discovered with certainty. Kerner (1870) has succeeded with $\frac{1}{20000}$, but I was not able to corroborate this statement.

As to morphine, its solutions assume a yellow hue if chlorine is added, whereas chlorine does not at all alter the colorless solutions of quinine.

The dark-brown coloration of *morphine* in solution, to which chlorine-water and ammonia have been added, is no longer produced if less than $\frac{1}{1000}$ of morphine is present.

From these observations it may be foreseen what must happen if a mixture of salts of both those alkaloids be tested by chlorine and ammonia. The green color, thalleiochine (thalleiochine), will appear notwithstanding the morphine if the amount of the latter is less than $\frac{1}{1000}$ of the solution. But the test of quinine fails if there be more than $\frac{1}{1000}$ of morphine present, even when the quinine is in considerable quantity. The green color of the thalleiochine is enveloped by the dark dingy-brown color due to the salt of morphine.

In a specimen of quinine containing morphine, or *vice versâ*, the presence of either of them can be shown as one pleases by means of chlorine and ammonia. In the comparatively concentrated solution the brown color of morphine will make its appearance, whereas thalleiochine results as soon as the quantity of the solvent much exceeds the proportion of 1,000 parts to one of morphine.

This is an illustration of the importance of not relying upon one test alone. In the fatal case alluded to, the presence of quinine happened to be ascertained, but morphine was overlooked. There was certainly no reason for presuming the presence of the latter, but one drop of nitric acid poured on the supposed hydrochlorate of quinine would have pointed out the presence of morphine, and spared the lives of two women.

I was curious to know the effect of bromine instead of chlorine in the above tests. The salts of morphine are apparently not altered by bromine and ammonia, but salts of quinine are more intensely colored by the latter process. The thalleiochine is then indeed produced in solutions which contain only $\frac{1}{2000}$ of quinine. Yet the behavior of bromine displays some striking differences. Chlorine alone, as already stated, causes no immediate alteration of somewhat diluted solutions of quinine, whereas they become turbid on addition of bromine as long as there is about $\frac{1}{250}$ or more of quinine present. Now the precipitate which is produced by bromine in the solution of quinine does *not* turn green if a little ammonia is subsequently added, or, at least, the thalleiochine thus obtained is rather grayish. But in more dilute solutions of quinine, bromine acts more readily than chlorine. An excess of bromine is to be carefully avoided. This is easily performed if the vapor of bromine, not the liquid bromine itself, is allowed to fall down on the surface of the solutions of quinine; their superficial layer only must be saturated with bromine by gently moving the liquid. Then a drop of ammonia will produce the green or somewhat bluish zone, which is much more persistent than that due to chlorine.

Consequently, for demonstration of the test under notice, chlorine is to be used in comparatively concentrated solutions. In solutions containing so little quinine (less than $\frac{1}{25000}$) that it is no longer precipitated by vapor of bromine, the thalleiochine test succeeds much better with bromine, and goes much further, as shown above.

A well-known test for morphine is iodic acid, which is decomposed by the alkaloid, and forms a beautiful violet solution with bisulphide of carbon and chloroform. This test succeeds with solutions containing no more than $\frac{1}{10000}$ part of morphine.—*Neues Jahrbuch für Pharmacie*, April, 1872.—*London Pharm. Journal.*

COMPOSITION OF BEER.

Mons. A. Metz made an analysis of some beer manufactured at Weisenau, near Mayence, from a mixture of forty cwt. of malt to eight cwt. of rice. He found that it contained of

Alcohol	3.65 per cent.	
Sugar	1.63 "	
Dextrine	5.13 "	
Proteids	0.37 "	7.36 per cent. extract.
Inorganic matter, including phosphoric acid	0.22 "	
Difference	0.01 "	

Compared with an average resulting from the examination of thirty-one different kinds of Bavarian beer by Mons. C. Prandtl, it will be seen that the amount of alcohol is about the same; but the total amount of extract, and especially the quantity of sugar, exceeds that of any of the Bavarian kinds. Mons. C. Prandtl found in Bavarian beer—

	On the average.	Maximum.	Minimum.
Alcohol	3.55 per cent.	3.98 per cent.	3.23 per cent.
Total Extract	6.07 "	6.61 "	5.42 "
Sugar	1.08 "	1.38 "	0.82 "

This rice beer is exceedingly clear and light; it effervesces, and has a peculiarly mild taste.—*Food Journal.*

Emulsion of Turpentine.—I. Winchele Forbes commends highly (*Amer. Journal of Pharmacy*) the following method:—

First. Pour the turpentine into a two-ounce vial, and shaking so as to coat the inside of the vial with a film of turpentine; this is to prevent the action of the moisture usually present.

Secondly. I add one scruple powdered acacia, and mix thoroughly with the oil.

Lastly. Half a fluid ounce of water is added, and the whole is well shaken. A perfect emulsion is the result, requiring less time for its preparation than to read the foregoing directions. The bottle may then be filled up with mucilage, or, according to my experience, a better product is obtained with water simply.

The deviation from the letter of the law in regard to the gum strength of the emulsion needs no apology to the practical pharmacist, as the sole object in view is to emulse the oil, and it will be found that ten grains to the fluid ounce of emulsion will afford a product superior in all respects (especially in fluidity) to one containing more gum, and more nearly approaching the peculiar characteristics of that most perfect of all emulsions—cow's milk.

Test for Creosote and Carbolic Acid.—I. N. R. Morson proposes (*L'Union Pharmaceutique*, June, 1872) to take advantage of the insolubility of creosote in glycerine, to detect the adulteration or substitution by carbolic acid—the presence of a very small amount of the latter, he states, renders the creosote soluble.

Manufacture of Collodium.—According to August Vogel, collodium is prepared in the following manner in the laboratory of the Royal University at Munich. Thirty parts (by weight) of finely powdered saltpetre are put into a glass cylinder with thirty parts of English sulphuric acid, and stirred with a glass rod until the saltpetre is entirely dissolved. Into this mixture are thrown two parts of cotton wool and stirred actively for five minutes. The cotton is then freely washed with large quantities of water until its reaction is scarcely acid. To hasten the operation, the cotton is then treated with strong alcohol until every trace of acid has been removed. The material is finally dried in thin sheets. This gun cotton is freely soluble in a mixture of equal parts of sulphuric ether and alcohol, and this collodium, poured upon a glass plate, leaves a perfectly transparent residue.—*Neues Repertorium für Pharmacie*, Heft I. vol. xxi., 1872.

Bed of Glauber's-Salt.—A deposit of Glauber's-salt has lately been discovered in the Caucasus, not very far from Tiflis and Marienfeld. In sinking a shaft the experimenters first passed through one foot of marl, two and a half feet of gray moist clay, seven of dark-gray bituminous saline clay, then penetrated a bed of pure Glauber's-salt to a depth of five feet, with a probability that the thickness was much greater. In the same region there are various lakes filled with solutions of Glauber's-salt, which furnish the apothecaries of that

neighborhood with what they need of that substance, as it crystallizes in perfect purity along the edge of the water.—*Harper's Monthly.*

Estimation of Purity of Glycerine by its Specific Gravity.

Specific Gravity.			
According to Fabian.	According to Metz.	Per cent. Glycerine.	Amount of Pure Glycerine to the Litre.
——	1.261	100	1.2612 kilogram.
1.232	1.232	90	0.1088 "
1.220	1.206	80	0.9648 "
1.179	1.179	70	0.8255 "
1.159	1.153	60	0.6918 "
1.127	1.125	50	0.5625 "
1.105	1.099	40	0.4396 "
1.075	1.073	30	0.3219 "
1.051	1.048	20	0.2096 "
1.024	1.024	10	0.1024 "

—*Vierteljahrschrift für praktische Pharmacie*, Heft 2, 1872.

Bromine as an Oxidizing Agent.—According to P. Waage, bromine is a very energetic oxidizer of all other substances, and will convert the sulphuret of a metal into sulphuric acid and the oxide of the metal.—*Ibid.*

Adulteration of Aniline Colors.—According to Joly, sugar is now extensively used to adulterate the aniline colors. It can best be detected by treating the dye with a mixture of alcohol and ether, which dissolves the aniline and leaves behind the sugar.—*Ibid.*

Upon Solution of the Metallic Benzoates in Fats.—M. Godin confirms the statement of M. Ricker that the metallic benzoates are soluble in the oils, and proposes to make cod-liver oil ferruginous in this way.—*Journal Pharm. et de Chemie*, April, 1872.

To Purify Tannic Acid.—M. Heinz states that commercial tannin owes its odor to a greenish resin, and that it may be rendered inodorous in the following way:—Dissolve the tannin in twice its weight of hot water. Introduce the solution into a glass vessel, and add one and a half parts of ether for every six parts of tannic acid. The mixture is greenish and turbid. After some hours the coagulated coloring matter precipitates, and the clear solution may be evaporated.—*Ibid.*

The So-called African Saffron.—By John R. Jackson, A.L.S., Curator of the Museums, Kew.—From the description of the so-called African Saffron by Professor Maisch, at p. 824 of the Journal, there seems no doubt but that the flowers are those of *Lyperia crocea*, Eckl., a scrophulariaceous plant of South Africa, small quantities of which have been imported into this country from time to time, chiefly for use as a dye.—*London Pharm. Journal.*

Test for Arsenic in Sulphuric Acid.—The presence of arsenic in concentrated sulphuric acid may be detected by cautiously adding drop by drop from 2 to 3 c.c. to a solution of a little stannous chloride in from 4 to 6 c.c. of hydrochloric acid of sp. gr. 1.12, the liquid being gently agitated after each addition. If arsenic be present, a yellow coloration changing to brown is produced; if not, the solution remains clear. This test is said to answer if the 500,000th part of arsenious acid be present.—*Dingl. Polyt. Journal.*—*London Pharm. Journal.*

Methylic Ether as a Means of Obtaining Cold.—Tellier has taken advantage of the extreme volatility of the ether produced by the action of sulphuric acid upon methylic alcohol as a means of obtaining cold. The various methods or machines employed may be found described in *Zeitschrift des Allgem. Oesterreich. Apotheker-Vereins*, June 1, 1872.

To Distinguish the Alcoolatures and Tinctures.—MM. Conche and Colton propose the following methods:—To ten drops of tincture or alcoolature (solution of fresh juice in alcohol) add five drops of the solution of the sub-acetate of lead; in the tincture a dirty yellow precipitate is formed, in the alcoolature one much less deep and verging on green.

A much more sensitive test is by adding to the preceding mixture fifteen or twenty drops of ammonia, when the precipitate deepens with the tincture, and on shaking with water a dirty yellow foam is formed; with the alcoolature the precipitate is white and the foam colorless.

A still greater sensitiveness is acquired by adding to the ammoniacal mixture a solution of sulphate of copper, which produces a green much more rapidly in the alcoolature than in the tincture; the first is also more yellow than the last.—*L'Union Pharmaceutique*, March, 1872.

Berberin in Coptis Trifolia.—In the *Neues Repertorium für Pharmacie*, Heft 4, Bd. XXI., 1872, Büchner confirms by analysis the discovery of Maish and Procter that berberin exists in quantity in gold-thread.

Acids of the Tomato.—According to S. D. McElhenie (*Journal of Pharmacy*), the acids of the tomato are citric, oxalic, malic, and tartaric in very small quantity.

Delicate Test for Gallic Acid.—Strasbourg (Pflüger's *Archiv*, IV.) announces an extremely delicate modification of Pettenkofer's test for gallic acid in the urine, suitable for clinical purposes. A strip of filtering-paper is dipped in urine, to which a little common sugar has been added, and on this paper, after drying, a drop of concentrated SO_3 is placed by means of a glass tube. If gallic acid be present, the paper assumes an intense violet color.

Stramonium Smoking.—A. Hirschberg states that when cigarettes of stramonium are smoked for asthma, there is no daturin whatever received in the system, but that the active principles generated are pyridin alkaloids.—*Zeitschrift des Allgem. Oester. Apothek.-Vereins*, June 10, 1872.

Polygonium Hydropiper.—Rademacher has obtained an acid from P. hydropiper which he believes to be its active principle. He first exhausts two pounds of the plant with dilute alcohol, distils off the alcohol, evaporates the watery residue to one-third its original bulk, and then filters out the resin-oil deposit. Acetate of lead is then added to the liquid, and the yellow precipitate, after repeated washings, is decomposed by sulphuretted hydrogen. The filtrate is now shaken with ether, and the latter allowed slowly to evaporate. The crystals which form are soluble in ether, alcohol, and chloroform, with difficulty in dilute alcohol. Under the microscope they resemble greatly uric acid in form. They are green, of a sharp, bitter taste, and strongly acid in reaction and general behavior.—*Zeitschrift des Allgem. Oester. Apothek.-Vereins.*

Table Showing Amount of Sulphuric Acid Necessary to Dissolve Alkaloids for Hypodermic Injection.

Alkaloid, 1 part.	Acid.
Aconitia (Duquesnel)	1 part.
Atropia	2.5 "
Narceine	7.5 "
Strychnia	2.5 "
Veratria	2.5 "

—Adrian, *L'Abeille Médicale*, July 15.

Table Showing Amount of Distilled Water Requisite to Dissolve Certain Alkaloid Salts.

One part.		Crystallized Alkaloid.	Water necessary.
Muriate of morphia, containing		0.80 parts.	20 parts.
Sulphate of morphia	"	0.76 "	10 "
Acetate of morphia	"	0.86 "	5 "
Sulphate of strychnia	"	0.75 "	10 "
Muriate of strychnia	"	0.83 "	8 "

—*Ibid.*

Cold Alcoholic Test for Albumen.—Dr. C. R. Drysdale reports from the Metropolitan Free Hospital (*The Boston Medical and Surgical Journal*, June 27; from *The Medical Press and Circular*), that he has tried the cold alcohol test for albumen recommended by Dr. Betz (*Memorabilien*, 1872), and that it has proved trustworthy in the cases tried by him. Dr. Betz remarks that boiling the urine is not always a sufficient plan when examinations are made in private practice, because albumen is not always thrown down by boiling. Also nitric acid is not certain in all cases. He mentions that a trustworthy and very easily obtained reagent is ordinary spirit as bought in shops. A portion of the urine is poured into a glass, and over it about an equal quantity of spirit, without allowing the two liquids to mingle. When albumen is present, the alcohol has a milky haze at the junction, and occasionally there are small nipples of albumen seen in the alcohol when the urine is very full of it. This process is so simple that it can always be made use of. According to Dr. Betz, this test will frequently show albumen when we are not inclined to think it exists on account of the absence of œdema, heaviness of the body (which is seen in children), foaming of the urine on micturition, scarlatina, or pneumonia. Dr. Drysdale has found the reaction in four cases of chronic albuminuria now under his care at the hospital.

The Influence of Pressure on Fermentation.—Mr. H. T. Brown (*The Academy*, June) has found that during alcoholic fermentation other gases besides carbonic anhydride are invariably given off. When malt ferments, he finds the gas unabsorbed by potash to be about $\frac{1}{300}$ of the total gas evolved. When fermentation takes place under reduced atmospheric pressure, the proportion of evolved gas not absorbed by potash is found to be considerably augmented, the increase being mainly due to hydrogen; and the oxidation products, acetic acid and aldehyde, are likewise more abundant in the fermented liquid. The author considers that water is decomposed during fermentation, dissociation of the water-molecules being favored by decrease of atmospheric pressure.—*Phil. Med. Times.*

TOXICOLOGY.

POISONING BY CROTON OIL.

Dr. G. H. Snead reports the following case in the *Richmond Med. and Surg. Journal* of June, 1872. Mrs. S. took by mistake, the third morning after confinement, two teaspoonfuls each of croton and sweet oil. For the abdominal burning and drastic purging, which came on very shortly, the nurse gave milk freely.

Drs. Winn and Snead saw her two hours after the accident; her pulse was beating 150 to the minute and scarcely perceptible; the entire surface was bathed in a cold, clammy sweat; her countenance sunken, with copious watery, choleraic dejections every few minutes. They administered gum-arabic water freely, and afterwards white of egg every hour; also 25 drops of laudanum every half hour till 75 drops were taken. At twelve o'clock M., six hours after the taking of the oil, the bowels moving incessantly, pulse 160 and sinking, skin deathly cold, and physiognomy betraying great nervous prostration. Continued mucilaginous drinks and white of egg, also gave $\frac{1}{4}$ grain of opium and 2 grains acetate lead every two hours. Three o'clock P.M., vomiting of dark-greenish matter, pulse quivering, and skin intensely cold. Brandy was given and the pulse responded promptly to its use, and always flagging when stimulants were suspended beyond the usual time. Twelve o'clock at night, pulse 160 and very feeble, complexion livid, bowels still unchecked. Stimulants freely administered, mustard sinapisms covering extremities and stomach, friction over surface.

Second day, pulse same, bowels moved every half hour, mind clear, features contracted, lips purple, and surface cold. Twelve o'clock at night—bowels moved every half hour, pulse 150 and sinking, skin very cold and clammy, vomiting of dark-greenish matter, picking at the bed-clothes, and restless.

Third morning, pulse 140, bowels checked, skin warmer, with vomiting lessened. Ordered lime-water and milk, stimulants, blister to stomach, rubefacients to extremities. Eight o'clock P.M., skin more pleasant, vomiting relieved, pulse 120.

Fourth morning, skin much improved, bowels quiet, but little vomiting, physiognomy much more favorable, pulse 100.

Fifth morning, reaction thoroughly established.

Patient recovered without any inflammation or any other injurious consequence, except the shedding of her finger and toe nails almost entire, due to the suspension of vitality in the extremities during three days.

RAPID DEATH FROM STINGS OF BEES.

BY J. O. SANDERS, M.D., CARROLLTON, MISSISSIPPI.

April 18th I was called to see a patient stung by bees. Mr. S., an intelligent man, gave the following account: Louis ——, a negro, aged about 45, climbed a tree where bees had swarmed on a limb, for the purpose of hiving them, carrying with him a saw. As soon as the limb commenced falling, the bees arose *en masse* and covered his head and face. He descended immediately, and, as soon as he reached the ground, commenced running as fast as he could; ran around three sides of a yard, some two hundred steps, passed through an open gate, and fell to the ground. Mr. S. ran to him with a bottle of spts. camphor, and succeeded in forcing him to take one swallow; the patient protesting at the time against assistance, declaring that he would certainly die. After two or three irregular and partial respirations he expired. Mr. S. thinks it could not have been more than five minutes from the time he was attacked by the bees before he breathed his last. When I arrived, about an hour and a quarter after the accident, I could, on careful examination, find no signs of life. He was a vigorous, muscular man, and in perfect health, so far as I can learn. Was death due in this case to direct nervous shock, or to absorption of virus, or both?—*Medical News.*

Arsenic in Sulphate of Potash.—A circular has been issued by M. Bussy, Director of the Paris School of Pharmacy, stating that he has received information of a serious accident that has resulted through the sending out by a Paris wholesale house of sulphate of potash, containing a certain proportion of arseniate of potash, and recommending that no *pharmacien* should receive or deliver to the public any product that he may have received as sulphate of potash, unless he has previously ascertained that it is not contaminated with the arseniate.

POISONING BY DECAYED PLUMS.

Dr. Jno. Dougall reports the following very interesting case in the *Glasgow Medical Journal* for May, 1872:—J. M'I., a girl, aged eight

years, ate a quantity of decayed plums. Some hours afterwards she felt sick, and during the following night the sickness increased, accompanied by gastric pain. Next day her mother noticed a profuse papular eruption on most of the body, which she thought was small-pox. On the third day from this (3d Sept.) I saw her. On the face blood was oozing from twenty or more parts, the intervening surface consisting entirely of various-sized bullæ distended with white opaque serum. The hairy scalp seemed in a similar condition. There was severe double conjunctivitis, photophobia, and lachrymation. From both nostrils were dripping gelatinous strings of sherry-colored mucus. The lips and angles of the mouth were raw, fissured, and bleeding. Blood was oozing from the spongy and turgid gums. The tongue was swollen and slightly furred. Ptyalism was extreme; her chin, denuded of epidermis, was bathed in a mixture of saliva, mucus, and blood. On further examination, the whole body, except a few patches of intensely congested skin, was found covered with bullæ or denuded of epidermis. The inner portion of both thighs, the sulcus between the buttocks, the perinæum and vulva were one raw, bleeding surface, while from the vagina a profuse muco-sanguinolent discharge was issuing. Pulse 125, weak; bowels confined; urine scanty and high-colored. A laxative was prescribed and nourishing diet. On the following morning the surface of the face was completely raw, which apparently was the state of the entire scalp, as the lower parts of the hair were silted up by a brownish viscid matrix—the thickened contents of ruptured bullæ. On the body several of these had burst, leaving a raw surface on their site, while many new ones had arisen. The bowels were freely opened, the dejecta resembling tar, and the urine diluted porter. These black excreta and the other conditions continued for a week, by which time she was in reality "flayed alive," the body being one raw, red mass. The entire hair of the scalp, eyebrows and eyelashes were shed. The nails of the fingers and toes all came off, attached to portions of skin. She recovered slowly, and at present (six months after) is in good health. The hair and nails have grown. There is an opacity at the outer margin of the left cornea; a cicatrix under the left eye, and on each shoulder there are still two large eschars, much raised. None of the teeth came out, nor were any of the other children who had eaten the plums known to be affected.

HYDRATE OF CHLORAL AND BROMIDE OF POTASSIUM IN STRYCHNIA POISONING.

Mr. E., an adult, took one grain of strychnia, and was seen, fifty minutes afterwards, by Dr. E. H. Coover, who used the following mixture:—

Hydrate of chloral, ʒ ss.; Bromide of potassium, ʒ iij.; Water, ʒ iss.; and Syrup of orange, ʒ iiss.

The patient was in violent tetanoid convulsions. The quantity of the mixture used is not definitely stated; but in one minute the symptoms were all relieved. A good recovery was effected.

BROMIDE OF POTASSIUM IN POISONING BY STRYCHNIA.

BY C. B. BATES, M.D., SANTA BARBARA.

J. D., aged 22, had taken about ten grains of strychnia on an empty stomach. Upon my arrival, about half an hour afterwards, I found him in a most violent tetanic convulsion, and at once forced him to swallow a dose of tartar emetic and ipecac, which after a time operated well. During the whole of this time convulsions were recurring every few minutes, and I gave him one grain of sulphate of morphia with about forty of bromide of potassium. Soon the paroxysms decreased in violence, and the intervals of rest became longer. The bromide of potassium, in doses of forty grains, was repeated every hour until he had taken half an ounce, when he was out of danger, and all that remained of the muscular spasm was an occasional jerking of the muscles of the lower jaw.—*Pacific Med. and Surg. Journal.*

POISONING BY CAMPHOR.

Dr. Jos. R. Beck (*St. Louis Med. and Surg. Journal*) reports two cases of camphor poisoning:—

Case I. Upon arriving at the house I found the boy lying upon his mother's lap, in strong convulsions. The boy was three years of age, and well grown. His scalp was intensely hot, and the appearance of his face indicated severe cerebral disturbance. The extremities were quite cold, the abdomen retracted, and the patient apparently moribund. Accidentally my nose was brought into the immediate vicinity of the child's mouth, when I at once perceived the peculiar odor of camphor. A few short and well-directed inquiries developed the following history:—About ten o'clock of the morning of that day the mother had given him a piece of camphor the size of an English marrowfat pea, and this the child chewed and swallowed. During the remainder of the day the child seemed as lively as usual, until about four o'clock P.M., when, without any premonitory symptoms, he fell over in a convulsion, which continued without intermission until my arrival, at five o'clock.

As the child was entirely unable to swallow, he was ordered an enema of two ounces of whiskey, suspended in two ounces of thin starch, to be repeated in two hours, if necessary; also bags of pounded ice to the scalp until the convulsion ceased. When I saw the patient again at 7.30 P.M. he had entirely recovered, and the second enema was not required.

CASE SECOND.—About six o'clock in the evening of the 30th of November, 1871, I was sent for to see R. J. L———, forty-two years, stout, healthy, and robust, who was then, and had been for nearly ten hours prior to that time, suffering from a violent abdominal pain, similar to that of hepatic colic. He was at this time very weak; in fact so much prostrated, that his voice, usually a deep bass, had sunk to a husky whisper, and a cold clammy perspiration covered his face and hands with large beaded drops. He talked most of the time in a low, muttering, delirious way. His extremities were cold, his abdomen retracted, and these symptoms, taken in conjunction with the looseness of the bowels for some hours past, and the haggard, anxious look upon the face, called to my mind Asiatic cholera.

Upon inquiry I learned that he had taken a tablespoonful of a solution of camphor from a bottle, which at that time stood upon a table in the sick-room, for colicky pains. This seemed to make him feel some better for a few minutes, but the pain soon set in sharp, decided, and more violent than ever. In addition to this, violent vomiting also began, and as the dose was repeated twice during the following four hours, he became more exhausted than ever. Upon making an examination of the solution in the bottle, I found it to consist of a *strong concentrated solution in alcohol.*

The treatment in this case consisted of sinapisms to the extremities, and an enema of thin starch, three ounces, whiskey four ounces, ammon. carb. ten grains; to be repeated in four hours. The stomach being so irritable as to reject any and all substances, whether food or medicine, the enemas were kept up for forty-eight hours, reducing the amount of whiskey half an ounce at each injection. The patient began to convalesce slowly, and it was not until the twelfth of December that he was discharged from treatment. He shortly afterwards left the city, and I have not heard from him since.

AMERICAN HELENIUM.

DR. J. M. BIGELOW calls attention to the poisonous properties of some of the American plants of the genus Helenium, especially H. tenuifolium, Nutt.

He quotes Dr. Galloway, of Kosciusko, Miss., as saying:—

"The first effect that is observable after a horse or mule has swal-

lowed a bit of the weed, is a twitching of the eyes and a dodging of the head, as if to avoid some imaginary blow. This is followed by twitchings in other parts of the body, which increase in frequency and severity until they pass into general convulsions of such violence as to throw the animal upon the ground. The spasms recur at intervals of a few minutes, and in most cases terminate in the death of the animal, unless timely remedies are employed. The convulsions are of a tonic character, and on their cessation the animal breaks out in a very profuse perspiration. In the intervals between the spasms the animal will eat greedily. The remedy consists in the prompt administration of lard or oil in some form. The first effects are observed within fifteen or twenty minutes after the weed has been swallowed. The active properties seem to reside chiefly in the top or bloom of the plant. I have seen sheep eat with seeming impunity the young plant. On the other hand, cattle are not unfrequently poisoned in the late fall or winter by eating the dried weed, after it has been killed by the frost. It is very rarely that stock raised here will bite it, even when hitched within its reach, unless very hungry and restless. Horses raised in Tennessee, Kentucky, or Texas are often poisoned by it. A few years ago a gentleman passed through this place with a drove of ponies, about twenty-five in number, from Texas. He arrived about noon, and remained until four o'clock P.M., when he started forward for a watering-place, five miles distant. The animals meanwhile, in feeding in the open lots and grounds around the town, had picked up so much of the sneeze-weed that eleven of them died before reaching the watering-place.

"A very small quantity of the sneeze-weed suffices to cause death in an animal. Its effects on the human economy appear to be equally deleterious. A few years ago a neighbor of mine had some flour prepared from wheat that had been threshed in a lot in which the sneeze-weed grew. A biscuit made from this flour, and eaten without butter, produced in a lady general nervous twitching. Two other members of the family partook of the biscuit, but ate freely of butter with it, and escaped any unpleasant symptoms. Four negroes eating of the same biscuit without butter were all poisoned. They presented the same phenomena of spasmodic action of the muscles, accompanied with more or less delirium and loss of consciousness. A small sack of the flour was sent by this gentleman to his sons in the army, before its poisonous character had appeared, and all who ate of it were affected in a similar manner."

Dr. Lewis, also of Kosciusko, writes: "In 1866 a squad of Federal cavalry was stationed at Goodman, Miss. Many of their horses died from eating sneeze-weed; some recovered by the use of oil."—*Detroit Review of Medicine.*

INJECTION OF AMMONIA INTO THE VEINS AS A REMEDY IN SNAKE-POISONING.

Through the courtesy of E. C. Bayley, Esq., Secretary to the Government of India, Home Department, we have had an opportunity of perusing a correspondence which has passed between Professor G. B. Halford, of Melbourne, and Dr. Fayrer, on the efficacy of injecting liquor ammoniæ into the veins, as a remedy for snake-poisoning. Dr. Fayrer asserts that his frequently repeated experiments on the dog prove that in really severe and effectual bites this plan of treatment does no good, and that injecting any other stimulant would be of equal avail in cases where stimulation might be beneficial. Professor Halford appeals to his experience of human beings, who had been bitten by the tiger-snake, recovering under this plan of treatment, and says that experience gained by experiments on dogs may not be true with regard to men. There can be no denying that men have recovered after having been bitten and subsequently had ammonia injected into the veins, but so have men who have been bitten and had no ammonia injected. The matter is one for discriminating and unbiassed experiment and observation. Doctors are not remarkable for concord regarding questions less difficult of satisfactory solution than this, and the only way of settling this issue is to take every opportunity of putting the vaunted remedy to trial, carefully study the case, and record it. Both Fayrer and Halford agree in thinking that ammonia is a good stimulant, and should be given in all cases of snake-poisoning. The question is—is Halford's plan of injecting it into the veins more effective than exhibiting it by the mouth or subcutaneously injecting it? We trust that those of our readers to whom an opportunity of putting the practice to trial offers may do so and report the result. It is always difficult in any case to say what might have happened had a certain thing been done or not done; but accurately recorded clinical experience is the only safe ground of conjecture, and the only sound basis of assertion in such matters. The quantity of liquor ammoniæ recommended for injections of this kind is 30 minims of the liquor ammoniæ, B. P., specific gravity .959.

The treatment is said to be equally effective in asthenia, arising from other poisons or causes; we have read of its sucessful employment in a case of poisoning by chlorodyne.—*Indian Med. Gazette*, June 1, 1872.

Hypodermic injections of Ammonia.—Dr. Zuelzer, of Berlin, has practised injections of ammonia with very good results in cases of fevers, when the profound asthenic symptoms threaten speedy dissolution. He injects from twenty to thirty drops of the solution, divided

into four injections, one in each limb. In no case have any grave accidents occurred. In many cases the results were both speedy and permanent. The formula used was:—

Take of Oil of Aniseed..... 1 part.
Alcohol (at 85°).....24 parts.
Liquid ammonia (liq. ammon. fort.?)... 5 "

Mix.

He commends most highly this treatment in all cases of collapse or depression threatening death, especially when the cause is a transient one—as in poisoning, pernicious chills, etc.—*Lyon Médical—Revue de Thérap. Med.-Chir.*, July 1, 1872.

ASSERTED ANTIDOTAL POWER OF CHLORAL IN STRYCHNIA POISONING.

At the séance of the French Academy of June 3, M. Orr offered a communication upon Liebreich's paper on the antagonism between strychnia and chloral. In his essay M. Orr stated that he had experimentally proven that the dose of chloral which Liebreich had relied on as being mortal to rabbits was very often not so; that the same was true of strychnia, and that consequently the investigation of Liebreich was not to be relied on as proving the respective antidotal powers of the drugs.

At a later séance M. Orr stated that further experiments had shown him that if a certainly fatal dose of chloral was given to a rabbit, the hypodermic injection of strychnia did not affect the result. He, however, stated that his own investigations were not complete, and that he was not ready to give a definite result.—*Gazette Médicale*, July 6, 1872.

POST-MORTEM DELIVERY.

The *Medical Press and Circular* of April 3 contains two letters by Drs. Swayne, of Carrick-on-Shannon, and Lanigan, of Ballymahon, describing two instances of *post-mortem* expulsion of the fœtus through the agency of gaseous distention of abdomen. Dr. Swayne states that he "never heard or read of a similar instance." We suspect that the incident is not an uncommon one in Indian medico-legal practice. We can recall at least one instance of such an occurrence. The body of a pregnant woman is despatched from a distant part of a district, and wrapped up rather loosely in a coarse cloth and bamboo matting. On arrival at the Sudder station the civil surgeon finds it semi-putrid, eyes bursting, limbs widely apart, and abdomen swollen, and hard as a

drum. On removing the coverings, a fœtus is found between the thighs, and the uterus not unfrequently prolapsed, while the bystanders declare that when the body was started nothing of the kind was observed. Dr. J. H. Aveling gives notes, in *The Lancet* of April 27, of six instances of *post-mortem* delivery. In five of these the delivery took place after the women had been committed to their coffins and graves. These examples are drawn from old records, but they have an air of circumstantiality and truth about them. In one instance the infant was extracted alive from the coffin. It would be very interesting and medico-legally important to find, as we have hinted is probable, that what is considered in England a curious and rare phenomenon, is in India a common and familiar circumstance. In *The Indian Medical Gazette* for August, 1867, Dr. R. F. Hutchinson, then civil surgeon of Patna, has recorded a good case of *post-mortem* parturition, which he considered unique. The medico-legal relations of effects produced by putrefaction can, perhaps, be better studied in India than in any other country in the world; because the conditions causing it are ever present in varying degrees, and the instances of changes of all kinds and degrees due to the influence of the heat and moisture abound. We have seen the viscera of the abdomen occupying the cavity of the thorax, into which they had been thrust through a rent in the diaphragm, of whose *post-mortem* causation there could be no reasonable doubt.—*Indian Med. Gazette*, June.

POISONING BY VERATRUM ALBUM.

In an able and elaborate paper in the New York *Med. Record* Dr. Peugnet reports the following case of poisoning.

A married lady took by mistake half an ounce of the homœopathic mother tincture of veratrum album, equivalent, according to subsequent analysis, to $\frac{7}{8}$ grain. Immediately after taking it she felt soothed and quiet, having been exceedingly nervous before.

At 10 P.M. her hands and feet became numb, a sensation which gradually extended over the whole body. She attempted to rise, but had two attacks of syncope in rapid succession; was taken immediately afterwards with violent vomiting.

10.30 P.M.—I found her pulseless, heart pulsating feebly and irregularly; resp. twenty-two and regular; eyes fixed and staring; pupils dilated; almost total loss of sight; the body covered with a cold and clammy perspiration; complete anæsthesia of the skin; voice as clear and as strong as in the collapse of cholera; lips of a bright carmine; mind clear, calm, and collected; thought that she was dying; vomiting

and retching incessantly; the fluid ejected was viscid, glairy mucus, of a greenish hue. No purging. I gave her an enema of brandy and water, three ounces of each, and thirty drops of ammonia, followed in a short time by a second, both of which were retained; then rubbed her limbs with dry mustard; applied mustard plasters to the epigastrium; then administered a third enema, which was forcibly retained.

Violent purging accompanied with severe tenesmus set in shortly afterwards, and small quantities of brandy were given by the mouth at short intervals, and ammonia to the nostrils.

Aug. 5th, 1 A.M.—Pulse perceptible for the first time, 38, feeble and intermittent; anæsthesia of the skin continues; vomiting not as violent, purging incessantly, accompanied with tenesmus; can now see distinctly. 3 A.M.—Pulse 44; anæsthesia continues; temperature normal; intense thirst. 10 A.M.—Pulse 96; vomiting occasionally; salivated and bloody stools frequent; marked pain in left iliac region, extending to left hypochondrium, increased by pressure.

Aug. 6th, 6 A.M.—Pulse 100; passed a restless night; tympanitis, marked tenderness of left iliac region; nausea, vomiting at intervals; tenesmus, with bloody stools every hour; pupils normal; anæsthesia persistent; thirst intense.

Aug. 8th, 6.30 A.M.—Pulse 105; tongue dry, furred, and brown; gums inflamed and tender, bleeding freely at intervals; aphthous ulceration of the palate; breath offensive; ptyalism profuse; nausea persistent; vomiting occasionally; stools frequent and bloody; occasional exacerbation of pain in left iliac region and left hypochondrium, increased by pressure.

Aug. 10th.—Pulse 105; tongue furred; gums ulcerated; nausea, but no vomiting; purging not as frequent; stools no longer bloody; anæsthesia of the lower extremities; a profuse flow of blood from the uterus came on during the night, although the menses were not due until the 22d.

Aug. 11th.—Pulse 94; marked improvement.

Aug. 14th.—I left her, as I supposed, convalescing; she felt comparatively well, diarrhœa almost checked; occasional anæsthesia of the upper and lower extremities. On the 16th sat out of doors; on the 17th took a ride; on the 18th another; was taken that night with violent tenesmus and catharsis; stools bloody; also slight nausea.

Aug. 22d, 12.15 A.M.—Pulse 102; tongue furred and brown, edges red, papillæ raised; tympanitis, tenesmus, pain in left iliac region, extending to left hypochondrium, increased by pressure; frequent bloody stools and nausea.

Aug. 25th.—Left her improving, with directions for her removal to the city on Monday, the 28th, as I did not deem it prudent for her to re-

main longer, owing to the marked insalubrity of the place, caused by miasm and defective drainage; as there then were in the same wing of the hotel two cases of dysentery, one of which was typho-malarial. The treatment, as suggested, was the occasional administration of Squibb's liquor opii comp.

Aug. 29th.—Arrived home last night; passed an uncomfortable night; pulse 100; recurrence of diarrhœa; evacuations very offensive, black, also some mucus, streaked with blood; nausea, vomited twice viscid greenish mucus streaked with blood; tongue furred. Ordered enema of liquor ferri persulphatis, 20 drops in ℥iv. of water every four hours, which were discontinued after the third on account of the pain and violent hysteria; five drops of the liquor were administered every four hours instead, also a pill containing argenti nitras $\frac{1}{12}$ gr. and ext. opii $\frac{1}{4}$ gr. every alternate four hours.

Sept. 2d.—Sanguineous stools having ceased, pepsine gr. iij. and bismuth trisnitras gr. xv. were given every two hours; quiniæ sulphatis gr. ij. every fourth hour; paregoric whenever necessary to allay tenesmus.

Sept. 8th.—Pulse 84; tongue smooth and clear; pain in left iliac region, extending upwards; from fourteen to sixteen stools in twenty-four hours, dark and small, accompanied with tenesmus. Morphiæ sulphas $\frac{1}{16}$ gr. added to pepsine and bismuth.

Sept. 17th.—Pulse 102; tongue furred, dry and brown, edges red, papillæ raised; no improvement, as the morphine was evidently acting as a nervous irritant; discontinued it, and substituted salicine gr. v. every four hours, discontinuing all other remedies.

Sept. 22d.—Marked improvement; lying on lounge.

Sept. 25th.—Evacuations very frequent, containing mucus streaked with blood; insisted upon giving an enema of Oj. of warm water, with long flexible tube, which she had heretofore strenuously objected to. Considerable mucus, streaked with blood, came away, also shreds of mucous membrane, and but a trace of fæcal matter; the pain from the distention of the intestine was intense; ordered a suppository of ext. opii aq. and argenti nitras āā gr. $\frac{1}{4}$ every four hours.

Sept. 26th.—Feels more comfortable; fewer evacuations; administered an enema of warm water Ojss.; it was followed by a discharge of mucus streaked with blood, shreds of mucous membrane, and but little fæcal matter.

Sept. 30th.—Steadily gaining; a fourth enema administered, followed by the first well-formed and perfectly healthy evacuation, with the exception of its extreme attenuation, evidently caused by a contraction of the colon.

From this time forward the recovery was rapid: with the exception

of insomnia, nervousness, tremor of the limbs, uncertainty of gait when the first attempts to walk were made; the only nervous symptoms which manifested themselves during the progress of the case were the loss of sight, paralysis of the recti muscles of the eye, and the anæsthesia; this last symptom persisted until the middle of September, migratory in its character, recurring principally on the anterior surface of the forearm and on the thigh, following the course of the anterior crural nerves. The urine was not examined at first, but in subsequent examinations an abundance of amorphous matter with a large amount of the crystals of oxalate of lime were found.

The only remedy which effectually controlled the insomnia was the hydrate of chloral in ten-grain doses.

The digestion was so much impaired, that milk gruels, beef-tea, broths, steaks, and confections of raw beef had to be successively abandoned; game, chicken, fish, and bread being exclusively relied upon.

The emaciation, at first very great, rapidly disappeared. On the 31st of January following her health was perfect, and the fæcal evacuations had entirely recovered their natural form and size.

Wolf-Bite.—In the *Indian Med. Gazette* of April 1 is detailed a case in which the larynx of a boy was opened by a wolf taking him by the throat. Recovery.

Leopard-Bite.—In the *Indian Med. Gazette* of April 1 is detailed the case of a man who escaped from a leopard after being seized by the throat. A terrible gaping wound was left, bounded superiorly by the hyoid bone and the tissues attached to it, inferiorly by the larynx, posteriorly by the lacerated open pharynx, and laterally by the carotids, both of which escaped only by a hair's breadth. Six weeks after the reception of the injury the man was doing well, and the œsophageal opening showed a tendency to contract.

Deaths from Snake-bite.—It is stated, says the *Homeward Mail*, that in the Tanjore district, no fewer than nineteen persons in every 100,000 die annually from snake-bite. Taking the population according to the census, this would give nearly 330 deaths per annum in that district alone; and assuming the rate of mortality over the whole presidency of Madras to be only half that which prevails in the Tanjore district, and the population to be 30,000,000, we get the startling total of nearly 3,000 people annually dying from snake-bites.

Deaths from Chloroform.—On June 8 an inquest was held at King's College Hospital on the body of William Lyon, aged 36. It was considered necessary to perform an operation on the jaw, and he was placed under the influence of chloroform, and two minutes after

its administration he expired. A verdict that deceased died from paralysis of the heart, caused by chloroform, was returned.

The death of a patient while on the operating-table, under the influence of chloroform, occurred on the 27th of last month in the practice of the eminent Vienna surgeon, Billroth.—*British Medical Journal*, June 15.

Tests for Detecting Strychnia.—The *Popular Science Review* states that Dr. Filhol, in a recent paper on this subject, maintains that strychnia should, in cases of poisoning, be obtained in the solid state; the alkalinity of its solution should be ascertained, as well as its intensely bitter taste; its behavior with chlorine, and its blue coloration under the influence of sulphuric acid and oxidizing substances should also be seen; while, lastly, as a very delicate reaction, Dr. Filhol observes that with chloride of gold, strychnia (in solution) yields immediately a crystalline precipitate, which, although slowly, is yet distinctly formed in solutions containing one-tenth of a milligramme of the alkaloid. This precipitate and that formed by chlorine are at once dissolved by concentrated sulphuric acid, and chromic acid being added, the well-known blue coloration that strychnia yields with this last reagent is produced. The presence of alcohol in liquids to be tested for strychnia should be avoided.—*Lancet*, April 27, 1872.

POISONOUS COSMETICS.

Eau de Cythère: 4 per ct. chloride lead, 8 per ct. hyposulphite of soda, 88 per ct. water. (Wittstein.)

Eau de Fées: Hyposulphite of lead, $1\frac{1}{3}$, hyposulphite of soda, 3, glycerine, 7, water, 88 parts. (Hagar and Jacobsen.)

Kalydon's and Gowland's Cosmetic Wash. Bitter almonds, 1 ounce; bichloride of mercury (corrosive sublimate), 8 grains; rosewater, 1 pound. (Dr. Ehrhardt.)

Pommade Tannique: Perfumed lard, 65, acetate of lead, 25, flowers of sulphur, 7 parts.

Damenpulver (Ladies' Powder): Pulverized talc, 4, carbonate of lead, 1 part. (J. Pohlmann, in Wien.)

Florida Water: Acetate of lead, 50, flowers of sulphur, 20, distilled water, 1,000 parts. (F. Eymæl.)

Bahama Water. According to Reveil, similar to Florida Water, but perfumed with aniseed oil.—T. M. B., in *American Chemist*, August, 1871.

PRESCRIPTIONS AND FORMULAS.

Cod-Liver Oil Emulsion.

Take of—

Tragacanth..... 8 parts.
Cold water..... ...500 "

Make into a mucilage.

This, by being simply agitated, makes with cod-liver in all proportions a homogeneous mixture, which may be rendered more agreeable by the addition of 4 parts of alcohol with a little oil of bitter almonds and a trace of oil of cinnamon to every 30 parts.—*Journ de Pharm.*, April, 1872.

Dust-Powder for Infants.

Take of Starch..... ℥ j.
Oxide of zinc..... ʒ ij.

S. Use with a brush.

Solution for Disinfecting Sponges.

Take of Permanganate of potash 4 parts.
Water.....100 "

Impregnate the sponge in this, and afterwards wash in a quart of a solution of sulphurous acid (25 parts to 100), afterwards wash plentifully with water.

According to M. Leriche, foul purulent sponges so treated regain their pure, marine odor, their elasticity, and become softer and whiter.—*L' Union Pharmaceutique*, May, 1872.

Syrup of Eucalyptus.

Take of Leaves of eucalyptus..100 grms.
Boiling water..... 1 litre.

Infuse for six hours and express; allow to stand and deposit; decant the liquid, and to it add 190 parts (by weight) of sugar for every 100 parts, dissolving by gentle heat.—*L' Union Pharmaceutique*, June, 1872.

Powder Stomachique.

Take of Powdered rhubarb... 3 grms.
Prepared chalk..... 3 "
Powdered opium....25 centigr.

Mix and divide into 12 packets.

One powder half an hour after meals.—*L' Union Médicale.*

Syrup of Chloroform.

Take of Pure chloroform..... 5 parts.
Rectified alcohol..... 24 "
Simple syrup.....300 "

Mix the chloroform and alcohol and add the syrup and shake.

Dose. A tablespoonful.—*L' Union Médicale.*

Delfraissé Revulsive Liniment.

Take of Oil of turpentine.....30 parts.
Tartar emetic..... 4 "

Mix.

Frictions 3 or 4 times a day in rheumatic and neuralgic pains, until an eruption is induced.—*L' Union Pharmaceut.*

Formulas for Hypodermic Use.

Crystallized Digitalin.

Take of—

Digitaline (crystal.)..1 centigr.
Alcohol at 95°.....5 cubic centigr.

Dissolve and add—

Distilled water.....5 cubic centigr.

One cubic centimetre contains 1 milligramme of digitalin.

Codeia.

Take of—

Crystallized codeia	1 grm.
Dilute sulphuric acid (10th)	150 grms.
Distilled water with glycerine (5 parts of latter to 100) enough to make	100 cubic centimetres.

—Adrian—*L'Abeille Médicale.*

Injections of Ergot in Maladies of the Uterus.

Dr. Swideski, in a recent memoir, collects about forty cases in which subcutaneous injections of ergot were employed in various diseases of the womb, especially chronic metritis, in some displacements and in metrorrhagia; its action was in every case prompt and certain. The author used at first the solution of Beaujean, and observes that, as the solution contains a larger quantity of alcohol, it acts more promptly, but excites greater pain, and frequently produces ulcers. The solutions employed are:—

1.	Extr. aqu. secal. cornut.	2 grms.
	Spir. vin. rectif., Glycerina, āā	7 "
2.	Extr. aqu. secal. cor.	2 grms.
	Spt. vin. rectif.	5 "
	Glycerina	12 "
3.	Extr. aqu. secal. cor., Spt. vin. rectif., āā	2 grms.
	Glycerina	12 "
4.	Extr. aqu. secal. cor.	1 grms.
	Spt. vin. rectif.	1 "
	Glycerina	3 "
	Aq. destil.	4 "

In cases of chronic ulceration he employs solutions 3 and 4; where prompt action is needed, Nos. 1 and 2, the former (Nos. 3 and 4) act in from one to two hours, the latter excite painful contractions in about half an hour. In some of the deviations of the womb the author reports the favorable results of the use of subcutaneous injections of ergot; he observes, however, that it is of no benefit if the case be of too long standing, if the uterus present considerable inflammation, or adhere to other organs in the vicinity. In chronic metritis the injections are employed every two or three days, and even where a complete cure cannot be hoped for, the leucorrhœa speedily ceases, and the uterus returns to its place.—*Gazetta Med. Ital. Lombard.*, 1872, No. 4.

Goldsmith's Solution of Bromine.

Bromide of potassium	160 grains.
Bromine	ʒ j.
Water	ʒ vij.

Mix. The above is the formula used by Dr. Goldsmith.—*Druggists' Circular.*

Snow Catarrh Powders.

℞ Sulphate of potassa,
Chlorate of potassa,
Gum acacia, equal parts of each and mix.

Remedy for Sore Lids, Breasts, etc.

℞	Glycer-amyl	2 drachms.
	Bromo-chloral	5 "

Mix.—*Druggists' Circular.*

Remedy for Styes.

℞	Glycerine	½ ounce.
	Bromo-chloral	10 ounces.
	Rose-water	1 drachm.
	Brandy	½ "

Mix. —*Druggists' Circular.*

Compound Elixir of Mandrake.

℞	Mandrake, Senna leaves, āā	64 scruples.
	Jalap	32 "
	Cloves, Cinnamon, āā	1 scruple.
	Cardamom, Aniseed, āā	2 drachms.
	Alcohol	5 ounces.
	Water	9 "
	Simple syrup	3 "

Bruise the roots, leaves, and aromatics,

and moisten with the alcohol and water (previously mixed); pack into a percolator, and pour the alcohol and water on it until 13 fluid ounces have passed; mix this with the syrup, filter, and add on the filter a sufficient quantity of water to make it measure one pint. Each fluid drachm contains 10 grains of mandrake, 10 grains of senna, 5 grains of jalap.—*Druggists' Circular.*

Bay Rum.

1. Formula much employed in the West Indies.

℞ Fol. myrti acriæ..... 2 pounds.
Sem. cardamomi..... ½ pound.
Cassiæ cinnamomi.... 2 ounces.
Caryophylli.....1½ "
Rum..... 9 quarts.
Distil 1½ gallons.

2. Probably the best Imitation.

℞ Oil of bay.....10 fl. drachms.
" of pimento... 1 fl. drachm.
Æth. acet..... 2 fl. ounces.
Alcohol..... 3 gallons.
Water..... 2½ "
Mix, and filter after a fortnight.

3. ℞ Olei pimentæ..... ½ ounce.
" caryophylli...15 drops.
" macis.....15 "
" roris marini..14 "
Alcohol..... 8 ounces.
Agitate thoroughly and add
New rum..... 8 ounces.
Tinct. of santal,
" of curcum. q. s.
to give a good color. After standing several days, to be filtered.—*Druggists' Circular.*

Syrupus Cimicifugæ Comp.

Take of Black snakeroot, in fine powder..... ℥ i.
Senega root in fine powder..... ℥ ss.
Ipecac root, in fine powder..... ʒ ij.
Calabria licorice, in fine powder..... ʒ ij.
Syr. wild cherry bark, U. S. P..... f ℥ vj.

Dissolve the licorice in eight fluid ounces of boiling water; when cold add to it eight fluid ounces of alcohol; moisten the actæa, senega, and ipecac with one fluid ounce of the mixture, and pack firmly in a cylindrical percolator; pour upon it the alcoholic mixture; after the liquid has disappeared from the top, displace with water sufficient to make the percolate measure one pint; evaporate this to six fluid ounces, boil and filter, adding sufficient water through the filter to make the liquid measure twelve fluid ounces, with twenty-three troy ounces of white sugar, make into a syrup, and when cold add the syrup wild cherry bark.—*Druggists' Circular.*

Elixir of Pepsin, Bismuth, and Strychnia.

℞ Pepsin (Hawley's)..256 grains.
Bismuth citrat..... 64 "
Strychniæ.. ..... 1 grain.
Aq. flor. aurantii... 6 ounces.
Spirit. vini, deod... 2 "
Aquæ..... 4 "
Glycerinæ (pure)... 2 "
Syrupi..... 2 "

Triturate the pepsin with the water and glycerine and filter; dissolve the bismuth in two ounces of orange flower water with a few drops of aqua ammoniæ. Dissolve the strychnia with a few drops of acetic acid. Add the bismuth solution to the pepsin, then the remainder of the fluids, and finally the solution of strychnia. Each fluid ounce contains: pepsin, sixteen grains; citrate of bismuth, four grains; strychnia, one-sixteenth of a grain.—*Druggists' Circular.*

Veratria as a Parasiticide.

Dr. Eugène Peugnet recommends, in *The American Journal of Syphilography and Dermatology* for July, the application of the following lotion in cases of tinea versicolor, favus, and aspergillus:—
℞ Veratriæ (sabadillæ), gr. iij.; acidi

acet. dil., ♏ x.: aq. rosæ., glycerinæ, āā ℥ ss. M. The tinctures of veratrum viride and veratrum album also possess parasiticide properties.

Pulvis Glycyrrhizæ Comp., or Pulvis Pectoralis Kurellæ,

According to the *Prussian Pharmacopœia*, is prepared as follows:

℞ Senna leaves, powdered,
Licorice root, powdered, āā.. ℥ vj.
Fennel seeds, powdered,
Pure sulphur, powdered, āā.. ℥ iij.
Refined sugar, powdered..... ℥ xviij.
Mix. —*Druggists' Circular.*

Infantile Paralysis.

Prof. Gross ordered at the clinic for a pale, diseased stunted child suffering from infantile paralysis:—

℞ Tinct. ferri chloridi, f ℥ j.
Tinct. nucis vomicæ, f ℥ ij.
Hydrargyri chlorid. corrosiv., gr. iv. M.

S. Take five drops three times daily in a tablespoonful of sweetened water.

℞ Ung. hydrargyri, ℥ iij.
Cerat. simplicis, ℥ v.
Veratriæ, gr. vj. M.

S. Put a piece the size of a marrowfat pea, twice a day, over the entire spine and along the back of the limbs.

Apply the ointment gently at first, until the parts become accustomed to its use. Wash the child every day with tepid water containing a tablespoonful of common salt to the quart. After bathing, wring the end of a towel out of cold water, and with it strike the entire surface of the body quite smartly, until the skin is reddened. This treatment to be continued for a month; at the end of which time his mother was directed to bring the child back.

New Method for Preparing Lin. Sapo.

J. A. Graefle (*Am. Jour. Pharm.*) proposes the following modification of the U. S. process, yielding a clear liniment in the course of a few minutes:—

Dry White Castile Soap (finely grated)	℥ iv.
Camphor	℥ ij.
Oil of Rosemary	fl ℥ ss.
Water	fl ℥ vj.
Alcohol	fl ℥ xxx.

Put the soap in a half-gallon bottle, pour on a pint of alcohol, shake well, add the water and shake again till the soap is dissolved.

Dissolve the camphor and oil in the remaining alcohol, mix the two solutions and filter.

Balsam of Honey.

(1) Balsam of tolu	1	pound.
Honey	1	"
Alcohol	1¼	gallons.
Or,		
(2) Balsam of tolu	2	ounces.
Styrax	2	"
Opium	½	drachm.
Honey	8	ounces.
Alcohol	2	pints.

Oil of Spike.

Barbadoes tar	2 pints.
Ol. terebinth	1 pint.
Ol. lini	1 "
Ol. lavand. exot	2 oz.

British Oil.

Ol. terebinth	1 pint.
Ol. lini	1 "
Barbadoes tar	1 "
Crude petroleum	8 oz.
Ol. succini (or juniper)	1 oz.

—M. R. Barker, *Canad. Pharmacist.*

Other receipts:—

Oil of Spike.

Barbadoes tar	2½	pints.
Spirits turpentine	4	"
Sulphuric acid	3	ounces.

British Oil.

Barbadoes tar.....2 pints.
Oil of amber.....1 ounce.
Spirits turpentine.....6 pints.
—*Canada Pharmacist.*

Syrupus Cubebæ.

C. L. Mitchell (*Am. Jour. Pharm.*) proposes the following formulæ for the preparation of a syrup of cubebs which has been found an elegant as well as efficacious remedy in diseases of the throat and lungs:—

Fld. ext. cubebs.....f ℥ ij.
Carb. magnesia.....f ℥ ss.
Sugar powd.....℥ xij.
Orange-flower water.....f ℥ ij.
Water.....q. s.
Ess. oil almonds.....gtt. j.

Rub up the fld. ext. with the carb. magnesia and then add ℥ ij. of the powd. sugar in small portions. When thoroughly mixed add gradually first the orange-flower water and then f ℥ vij. water, constantly triturating the mixture until the sugar is dissolved. Filter and add q. s. water through the filter to measure f ℥ xj., in which dissolve the balance of the sugar without heat. Add the oil almonds cut in a little alcohol, and again filter, adding, if necessary, q. s. water through the filter to measure 1 pt. The dose of this syrup is f ℥ j–iv., and it may be given in even larger doses if desired. It may also be made by using the officinal oleoresin in the proper proportion in place of the fluid extract.

Pyrosis.

Dr. Thompson (*Amer. Pract.*) says:—

In the treatment of pyrosis, or water-brash, the antacids are to be resorted to, particularly the saccharated solution of lime-water and milk—

℞ Liquoris calcis saccharati..f ℥ i–iv.
Lactis, ad.....f ℥ iv. M.

It may be well to remember that the addition of fifteen grains of bicarbonate of soda to the quart of milk not only prevents it from turning sour, but renders it more digestible.

Antacid for Heartburn.

℞ Potassæ subcarbonat.... } āā ℥ ij.
Spirit. lavand. comp.... }
Sacchar. alb.....℥ j.
Tinct. opii.....gtt. xxx.
Aquæ.....℥ iiiss.
M. S. Tablespoonful as required.
—Dr. B. S. Thompson, *American Practitioner.*

Gonorrhœal Ophthalmia.

The following is the treatment of a very severe case of gonorrhœal ophthalmia adopted in the Meath Hospital, Dublin, by Mr. L. H. Ormsby:—

On March 25th the patient was put to bed and put on low diet, all stimulants stopped, and the emetic cathartic mixture ordered, as he was a plethoric, strong young fellow, containing

℞ Antimonii tartrati.....gr. j.;
Sulph. magnesia.....℥ j.;
Aquæ.....ad ℥ viij.

Two tablespoonfuls of this mixture every third hour, until the bowels are well moved.

Two leeches were ordered to be applied on the internal and external canthus of the eye, and a solution of nitrate of silver containing two grains to the ounce, to be injected into the eye every hour. A belladonna lotion to be applied to the eyelid to soothe the pain, and directions given to the patient to lie on the affected side to prevent any of the gonorrhœal matter flowing across the bridge of the nose into the other eye; the chemosed portion of conjunctiva was scarified by Mr. Ormsby on two occasions with marked benefit, and in the course of the case the leeches were repeated with great effect. The palpebral conjunctiva was painted with a ten-grain solution of nitrate of silver to the ounce every twenty-four hours. On the 9th of April the inflammation was at its highest, the cornea was glazed, and the patient could not see anything with

it; in about a week longer, signs of the inflammation subsiding were evident, he was then ordered

℞ Iodide potass.....gr. 40;
Tinct. cinchon. co..... ℥ j.;
Syrup. aurant..... ʒ ij.;
Decoct. cinchon.....ad ℥ viij.

Two tablespoonfuls thrice daily.

The eye from this went on remarkably well, the inflammation subsided rapidly, and all danger of sloughing of the cornea disappeared, the cornea began to clear, and he could distinguish objects. He left the hospital well on the 6th of May, 1872. —*Med. Press and Circular*, June 12.

Enlarged Testicle.

Dr. D. Hayes Agnew used the following for indolent enlargement of the testicle, supposed to be strumous.

The man was ordered to take ℥ ss. ol. morr., with gt. xv. syr. ferri iodidi after each meal; also, arsen. iodidi gr. 1-18 t. d. Locally to apply

℞ Ext. bellad.,
Ung. hydrarg.,
" iodine,
" adipis, āā ʒ ij. M.

If the ointment irritates the skin, it may be further diluted.—*Med. and Surg. Reporter.*

Solution for Erysipelas (Trousseau).

Take of sulphuric ether....60 parts.
" camphor.....30 "

Dissolve.

This solution is to be applied by means of a little tuft of charpie upon the erysipelatous (erythematous?) surface of newborn children.—*Union Méd.*

Ricord's Resolvent Plaster.

Take of

Plaster of vigo and
Plaster of hemlock, each.10 parts.
Extract of opium..... 1 part.

Mix and make into a plaster. To be used locally in subacute buboes and orchitis.—*Union Méd.*

Formula for Dyspepsia of Debauchees.

Dr. James R. Wood's formula is commended by Dr. B. S. Thompson, *American Practitioner*, July, 1872. It is as follows:—

℞ Tinct. valerian aromat. } āā ℥ ij.;
Lupulin..... }
Tinct. cardamom..... ℥ ss.

M. S. A teaspoonful as required.

Gun Cotton and its Preparation.

BY CHARLES H. MITCHELL.

A number of experiments were tried, with a view of ascertaining the relative proportions of cotton and acids, together with the proper time for maceration necessary to produce a cotton which should combine the largest yield with the highest explosive power and solubility. The following formula was at length adopted:

Raw cotton.....	2 parts.
Carbonate potassa.....	1 "
Distilled water.....	100 "

Boil for several hours, adding water to keep up the measure; then wash until free from any alkali, and dry. Then take of:

Purified cotton.....	7 oz. av.
Nitrous acid,* s. g. 1.42...	4 pts.
Sulphuric acid, " 1.84...	4 "

Mix the acids in a stone jar capable of holding 2 gals., and when cooled to about 80° Fahr., immerse the cotton in small portions at a time; cover the jar and allow to stand 4 days in a moderately cool place (temp. 50° to 70° Fahr.). Then wash the cotton, in small portions, in hot water, to remove the principal part of the acid; pack in a conical glass percolator, and pour on distilled water until the washings are not affected by sol. chloride barium; drain and dry. Yield, 11 oz. av.

* Nitric, saturated with nitrous acid.—*Ed. Amer. Journ. Pharm.*

This cotton is perfectly white, of a harsh, gritty fibre, very explosive, leaving scarcely any ash, soluble in ether, ether fortior, acetic ether, glacial acetic acid, and in mixture of alcohol and ether, varying from 1 part ether to 3 parts alcohol to pure ether itself. If a cotton superior to this is desired, it may be obtained by treating this cotton with an additional proportion of the mixed acids, washing and dry as before. The cotton gains about one per ct. in weight, becomes perfectly soluble, and is so free from any ash as to scarcely scorch a sheet of white paper it may be burnt on. Both this and the previous gun cotton may be ignited on gunpowder without exploding it. The advantages claimed for this cotton over that of the U. S. P. are that it is perfectly soluble, very explosive, cheap, its manufacture is much more easy, requiring but little time and attention, and turning out a superior product with large yield and less cost.

The subject of collodion next claims our attention, it being the most important pharmaceutical preparation of gun cotton. The applicability of gun cotton, in ethereal solution, to the dressing of wounds, inflamed surfaces, etc., was first made known by Dr. Horace Maynard, of Boston. Its valuable properties soon commanded attention, and at once supplied a want long felt in the medical profession. No better formula for collodion can be found than that of the U. S. P. Using the cotton prepared as before mentioned, it left nothing to be desired.

Collodion can also be made the vehicle for other medicines. Those remedies which are used externally, of course, can only be administered in this manner. Having made a number of experiments on this subject, I present the following formulæ, several of which I think are new:

Styptics.

Styptic Collodion.

℞	Tannin.....	℥ ij.
	Stronger alcohol.....	f ℥ iv.
	Stronger ether.....	f ℥ xii.
	Soluble cotton.....	℥ j. ʒ ij.
	Canada balsam.....	℥ j.

Introduce the cotton into a suitable bottle, pour on it 2 fluid ounces of alcohol, shake well; then add 10 fluid ounces of the ether, agitate frequently until dissolved. Dissolve the tannic acid in a mixture of the remainder of the alcohol and ether, mix with the first liquid, add the balsam, allow to stand until clear; then pour off.

Collodion with Sesquichloride of Iron.

℞	Sesquichloride of iron.	℥ j. grs. iv.
	Stronger alcohol.....	f ℥ iv.
	" ether.....	f ℥ xij.
	Soluble cotton.....	℥ j. grs. iv.

Into a suitable bottle introduce the cotton, pour on 2 fluid ounces of the alcohol, and shake well; then add the ether, and agitate frequently until dissolved. Dissolve the sesquichloride of iron in the balance of the alcohol; mix with the prepared collodion.

Anodynes.

Collodion with Aconite.

℞	Pulv. aconite root...	℥ ij.
	Ether.....	f ℥ vj.
	Soluble cotton.....	℥ j. grs. iv.
	Stronger alcohol.....	q. s.

Mix the ether with 2 fluid ounces of alcohol, moisten the aconite with 1 fluid ounce of this, pack in a percolator, and percolate with the balance, pouring on *q. s.* alcohol to recover 8 fluid ounces, in which dissolve the cotton.

Collodion with Belladonna.

℞	Powdered belladonna root.....	℥ ij.
	Ether.....	f ℥ vj.
	Alcohol.....	q. s.
	Gun cotton.....	℥ j. grs. iv.

Mix the ether with 2 fluid ounces of alcohol, moisten the belladonna with 1 fluid ounce of this, pack in a percolator and percolate with the balance, pouring

on *q. s.* alcohol to recover 8 fluid ounces, in which dissolve the cotton.

Antiseptics and Disinfectants.

Collodion with Carbolic Acid.

℞ Carbolic acid..... ʒ j.
Ether..... f ʒ vj.
Stronger alcohol.... f ʒ ij.
Gun cotton..... ʒ j. grs. iv.

Dissolve the gun cotton in the ether and alcohol mixed, and then add the carbolic acid.

Collodion with Sulpho-carbolate of Zinc.

℞ Sulpho-carbolate of zinc ʒ j.
Ether ..... f ʒ vj.
Stronger alcohol..... f ʒ ij.
Gun cotton..... ʒ j. grs. iv.

Introduce the cotton into a suitable bottle, add 1 fluid ounce alcohol, shake well; add the ether, and agitate frequently until dissolved. Dissolve the zinc salt in the balance of the alcohol, and mix with the prepared collodion.

Collodion with Thymol.

℞ Thymol..... ʒ j.
Ether..... f ʒ vj.
Stronger alcohol..... f ʒ ij.
Gun cotton..... ʒ j. grs. iv.

Dissolve the cotton in a mixture of ether with part of the alcohol, dissolve the thymol in the balance of the alcohol, and mix.

Stimulants in Cutaneous Diseases.

Collodion with Iodide of Mercury.

℞ Mercuric iodide..... ʒ j.
Potassium iodide.... ʒ ss.
Alcohol..... f ʒ iv.
Ether..... f ʒ iv.
Gun cotton..... ʒ j. grs. iv.

Triturate the iodides together in a mortar, add the alcohol boiling, and rub until they are completely dissolved. Then add the gun cotton, lastly the ether, and agitate frequently until the cotton is all dissolved.

Stimulants and Rubefacients.

Collodion with Arnica.

℞ Pulv. arnica..... ʒ iv.
Ether..... f ʒ xij.
Stronger alcohol... q. s.
Gun cotton..... ʒ ij. grs. viij.

Mix the ether with 4 fluid ounces alcohol. Moisten the arnica with *q. s.* of this, pack in a percolator, and pour on the balance, following with alcohol until 16 fluid ounces of tincture have been recovered; to this add the cotton, and agitate frequently until dissolved.

Collodion with Capsicum.

℞ Grd. capsicum..... ʒ iv.
Ether..... f ʒ xij.
Stronger alcohol..... q. s.
Gun cotton..... 100 grs.

Proceed as in collodion with arnica, recovering 16 fluid ounces of tincture, in which dissolve the gun cotton.

Collodion with Mezereon.

℞ Mezereon..... ʒ iv.
Ether..... f ʒ xij.
Alcohol..... ..... q. s.
Gun cotton..... 128 grs.

Mix the ether with 4 fluid ounces of strong alcohol, and in this allow the mezereon to macerate one week. Drain, pack tightly in a conical percolator, pour on the separated liquid, and follow with enough alcohol to recover 16 fluid ounces of tincture, in which dissolve the cotton.

Collodion with Savin.

℞ Powd. savin leaves..... ʒ iv.
Ether.....f xij.
Alcohol.....q. s.
Gun cotton.....grs. 128.

Proceed in same manner as in collodion with capsicum.

Collodion with Black Pepper.

℞ Grd. blk. pepper..... iv.
Ether.....f ʒ xij.
Alcohol.....q. s.
Gun cotton.....128 grs.

Proceed in the same manner as in collodion with capsicum.

Vesicants.

Collodion with Cantharides.

℞ Powd. cantharides..... ℥ iv.
Ether.....f ℥ xij.
Stronger alcohol.....q. s.
Gun cotton.....80 grs.

Moisten the cantharides with a small portion of the ether, and pack in a conical percolator. Then pour on the balance of the ether, mixed with 4 fluid ounces alcohol, and follow with enough alcohol to recover 16 fluid ounces, in which dissolve the gun cotton.

These collodions can be used as substitutes for many of the officinal plasters, having the advantage of occupying a small bulk, ready adaptability to any surface, and powerful therapeutic action.

I have endeavored, as far as possible, to give some practical information on a branch of pharmacy of which comparatively little is known. The subject is, I think, an important one, since gun cotton and collodion occupy a high position in both medicine and the useful arts, and to its elaboration and useful application too much study cannot be devoted.—*Am. Journ. of Pharm.*

Churchill's Iodine Caustic.

By the kindness of Dr. William Neergaard we are able to give the formulæ as follows:—

"Churchill's iodine caustic is composed of 'Iodine, one drachm; Iodide of potassium, two drachms; Water, half a fluid ounce. Mix.'

"This mixture will be seen to be more than five times the strength of liq. iodinii co. of the U. S. Pharmacopœia, which it otherwise resembles.

"Churchill's compound tincture of iodine is: 'Pure iodine, two and a half ounces; iodide of potassium, half an ounce; alcohol, four fluid ounces; rectified spirit of wine, twelve fluid ounces. Mix them.'"—*New York Medical Journal.*

Prof. Gross's Treatment of Goitre.

Treatment will consist in stimulating the absorbent vessels, although the application of agents of too stimulating a character must be avoided, otherwise irritation will be produced, and the mass will be enlarged instead of diminished. The neck will be thoroughly washed at least once in the twenty-four hours with hot water and soap, and immediately afterwards a portion of the following ointment will be applied to the surface of the tumor and well rubbed in:—

℞ Ung. hydrarg. biniodid.... ℥ j.;
Cerat simp..... ℥ vj. M.

The patient will take internally the *Liquor iodinii compositus*, gtt. viij., in sweetened water, three times daily.

A piece of thin flannel and oiled silk will be worn around the neck. The diet will be regulated and all red meats avoided. Six grains of blue mass in combination with a grain of ipecac will be given now and then at bedtime to regulate the secretions.

Preparation of a very Active Cantharidal Plaster.

BY PROF. G. DRAGENDORFF (Dorpat, Russia).

Apothecaries frequently complain that some cantharides do not furnish an active blistering plaster; that the same furnish, even when treated with acetic ether, an extract so poor in cantharidin, that with its aid no good Druott's blistering tissue can be produced. In most cases the opinion is expressed that the flies contain too small a percentage of cantharidin. My experience teaches me to discredit the latter opinion. It is possible to obtain good preparations even from such apparently poor cantharides, it being only necessary to thoroughly extract the cantharidin they contain.

A few observations show how poorly this is commonly accomplished. According to my experience the amount of cantharidin in Spanish flies varies from 0.27 to 0.5 per cent. The coating of a vesicating tissue 20 c. m. long and 12 wide, requires about 25 grm. plaster substance,

containing usually about 6 grm. powdered Spanish flies, furnishing at least 0.016 cantharidin. 0.00002 grm. cantharidin suffice for a blistering surface of a square centimetre, or 0.0048 grm. for 240 square centimetres, or less than one-third of the smallest quantity that may be considered present in the plaster. Mechanical causes may partly be found to be the ones that prevent a thorough action of the plaster. A plaster of poor adhesiveness, not being in close contact with the epidermis, does not act because that close contact is wanting which is necessary for the absorption of the cantharidin. It is also a mistake of several pharmacopœias to permit the use of coarsely-powdered cantharides, the quantity of cantharidin in which is not uniformly distributed in the plaster, even if the powder is heated for a long time with the oil.

Other causes, unnoticed heretofore, also weigh heavily in this direction. The cantharidin is present in the Spanish flies in several different combinations, in which it is firmly held. This fact I have mentioned already in my "Contributions to Toxicological Chemistry," on the different behavior of flies towards various solvents. Cantharides with about 0·3 per cent. of cantharidin yield to water, even after repeated boiling with fresh portions of the same, only about half of their cantharidin, while the remainder is only yielded to potassa lye. In the same manner, alcohol, chloroform, and ether dissolve only 30 per cent. of the blistering substance. If all the cantharidin is to be extracted, bases like potassa or soda must be employed, which form easily soluble salts with the cantharidin. Together with Masing, I demonstrated years ago that the salts thus formed are energetic blistering agents. During the past two years reference has occasionally been made to our observation, especially by Delpech and Guichard, recommending the cantharidates of soda and potassa as vesicants.

Without alluding to this further, I would say that by the aid of soda or potassa the entire amount of cantharidin contained in the flies may be rendered active. The finely-powdered flies are mixed to a paste with diluted alkaline lye of about 1.1 sp. gr., heated in water-bath for twenty-five to thirty minutes, when sufficient muriatic acid is added to have a trifling surplus of the same, and the whole mass is dried rapidly in the water-bath. The residue, which we may call "prepared cantharides," is powdered anew and employed for the preparation of the plaster, or for the extract with acetic ether for use upon tissue. The small quantity of potassium or sodium chloride present is in no case injurious. The cantharidin is now present in the mixture in a free state. In a drug store in this city, where my proposition has been followed, no complaints have been made about the preparation.

Even for the preparation of the pure cantharidin, the above-mentioned process is worthy of attention. As I mentioned before, ether, alcohol, etc., dissolves from the cantharides, not "prepared," only a fraction of the cantharidin present.—*The Chicago Pharmacist.*

GENERAL RECEIPTS.

Our Writing Fluids.

ARCHIBALD PATTERSON.

Concerning the composition of ink. When we look at the usual source, viz., galls, one would at first imagine that gallic acid wrought a most important part in its manufacture, but such is not the case. The galls are used in the process, not because they are rich in gallic acid, which they are not, although it is from them we obtain most of the gallic acid of commerce, but because they contain a high percentage of tannic acid.

A paper on the commercial value of dyestuffs, which appeared in the *Pharmaceutical Journal* of last January, says, in speaking of galls, that the following may be considered as the composition of an average sample of gall nuts:—

Tannic acid	65.0
Gallic acid	2.0
Ellagic acid, Luteo-gallic acid	2.0
Chlorophyll and volatile oil	.7
Brown extractive matter	2.5
Gum	2.5
Starch	2.0
Lignine	10.5
Sugar, albumen, etc., and ash	1.3
Water	11.5
	100.0

Thus we see that galls only contain a very small proportion of gallic acid. This substance is obtained by exposing the galls for a number of weeks, thereby inducing fermentation, in which the tannic acid becomes oxidized, and converted into gallic acid. The action that takes place is: the protosalt of iron, say the sulphate, is decomposed, the iron combines with the tannic acid, forming a dark bluish-black precipitate, called the tanno-gallate of iron, while the sulphuric acid is set free, and remains as such in the ink. The term "tanno-gallate of iron" is apt, as already shown, to cause a misrepresentation of the quantity of gallic acid, which although it may, and frequently does exist in ink, must be in very small proportion.

If the salt of iron be pure, which is seldom the case in commerce, the protosalts alone should give the black characteristic precipitate with tannin, while it requires a persalt of iron to produce the same result with gallic acid. As this tanno-gallate of iron (?) is a precipitate, and not soluble in the ink, it becomes necessary to add something to give the fluid a body or consistence which keeps this precipitate in suspension; hence the use of gum-arabic, which invariably forms part of the formula for ink.

The proportions which appear most suitable, and upon which most dependence can be placed, are—bruised galls, one pound; to this add one gallon of boiling water, and one-third of the weight of the galls, viz., five ounces, and a third of sulphate of iron, in solution; also three ounces of gum-arabic previously dissolved, and a few bruised cloves, or a few drops of creosote or carbolic acid dissolved in methylated spirit. It is better to allow the galls to macerate for twenty-four hours, then to strain the infusion and add the other ingredients.

I cannot do better at this part of the subject than offer you a formula used and recommended by that eminent chemist, the late Dr. Penny, of Anderson's University in this city.

Take of bruised galls twelve ounces, macerate for a week in one gallon of cold water, then add six ounces of sulphate of iron in solution, also six ounces of mucilage of gum-arabic, and five or six drops of creosote.

The learned doctor has here taken advantage of a fact well known to chemists—viz., that tannic acid is more soluble in cold than in hot water—hence the cold maceration is prescribed, which I believe is pretty generally employed by first-class ink manufacturers.

The celebrated blue-black ink prepared by Messrs. Duncan, Flockhart, and Company, of Edinburgh, is said to be prepared by the process of cold maceration. A formula, said to be that of Messrs. Duncan, Flockhart, and Company, was printed and circulated some years ago by an Edinburgh gentleman, of which the following is a copy, and which explains the process more fully:—

Receipt for Preparing Blue-Black Writing Ink.

(*Which also serves well for Copying Ink.*)

Blue aleppo galls (free from insect perforation).....	4½ ounces.
Bruised cloves.....	1 drachm.
Cold water.....	40 ounces.
Purified sulphate of iron...	1½ "
Pure sulphuric acid (by measure).....	35 minims.
Sulphate of indigo (in the form of a thinnish paste, and which should be *neutral*, or nearly so).....	0¼ ounce.

Place the galls, when bruised, with the cloves, in a fifty-ounce bottle, pour upon them the water, and digest, shaking often daily for a fortnight. Then filter through paper in another fifty-ounce bottle. Get out, also, the refuse of the galls, and wring out of it the remaining liquor through a strong clean linen or cotton cloth into the filter, in order that as little as possible be lost. Next put in the iron, dissolve completely, and filter through paper. Then the acid, and agitate briskly. Lastly the indigo, and thoroughly mix by shaking. Pass the whole through paper. Just filter out of one bottle into the other till the operation has been completed.

On a large scale, this fine ink may be made by percolation, as Duncan, Flockhart, and Company, and others in Edinburgh, do it, the above being said to be their recipe.

The weights used are avoirdupois, and the measures used are apothecaries' measures.

Note.—No gum or sugar is proper, and on no account must the acid be omitted. When intended for copying, 5½ ounces galls are the quantity.

You will observe that there are several peculiarities about this writing-fluid, viz.:—First, the cold process is used. Second, the want of gum. Third, the use of sulphate of indigo, which is a solvent for the black precipitate, the tanno-gallate of iron; hence the gum arabic is not required, as it is only used to suspend this precipitate. Fourth, the deficiency of iron, which may be accounted for by the *pure* protosulphate being used, which cannot contain, or should not contain, any oxide, so that all the iron is free to combine with the tannin. Fifth, the use of free sulphuric acid, which is generally looked upon as detrimental to writing fluids, but which must be introduced here for some purpose, of which I am as yet ignorant.

Thus far I have only spoken of high-class inks, but it frequently occurs that an article is required which is to be sold at a cheaper rate than that wholly made from galls; and the vegetable world gives us an ample range of materials to select from, many of which contain tannin in fair quantity.

In this case other ingredients may be substituted instead of part of the galls; thus we often see logwood substituted, and catechu, sumach, and oak-bark may be used for the same purpose. Many other substances, such as elm-wood, elder, chestnut, beech, willow, plum, cherry, and

poplar, all contain a certain amount of astringent properties, but none of them are to be compared to galls, and are not likely to supersede them in the manufacture of ink, so long as galls can be had for anything like a fair price. The chemist cannot decide in fixing the proportions required for making ink as he would do almost any other chemical problem, as the substances used are not all of the same relative value, nor, indeed, may two samples of the same substance be equally rich in the material required, viz., tannin, so that he must make an analysis every time he prepares his ink, to estimate the value of his tannin producer, or, what is more convenient, he must fix on certain proportions which are known to produce (by experiment) good results, and do his best in selecting his materials up to a fair average standard.

Thus we see, that although galls are used at present as the most suitable substance for making ink, still any failure or stoppage of supply in the production of galls can never now leave us entirely dependent on that source for the preparation of our "writing fluids."

It would be impossible, and, if possible, would be uninstructive, to mention all the substances which have found their way into formulæ for inks, many of which are not only foolish, but incompatible, showing a want of chemical knowledge.

Let us now glance at the properties of the various ingredients used in the process. If we use an excess of galls we simply throw away money, and render the ink more liable to mould. If we use an excess of iron, the galls being insufficient to decompose it, the characteristic color of its oxide is soon shown by the writing becoming brown. The use of an excess of gum causes the ink to clog the pens, and the writing to be wanting in fluency. About twenty-five years ago an ink named *Japan ink* was very much in use; it produced a beautiful glossy appearance when written, but clogged the pen so much that it soon fell into disuse; its defect was too much gum. The water should be as soft as possible—that is, it should contain no lime, or other earthy matter; hence rain-water, or, better, distilled water, is frequently prescribed in receipts for making ink. The cheapest ink which has hitherto been introduced is one composed of a saturated solution of logwood, obtained by boiling twenty-two pounds of logwood in a sufficiency of water to produce, after being strained, fourteen gallons of liquor; to this decoction one pound (avoirdupois) of yellow chromate of potash (not bichromate) is added in solution; the proportions are one thousand parts of solution to one of chromate; the change of color is not an immediate one, but gradually becomes darker. The experiment may be tried, on the small scale, by using logwood a quarter of a pound boiled in water to produce two pints, to which, when strained, add twenty grains of chromate of potash in solution.

We will now glance at the composition of "writing fluids" used for special purposes; thus we know that writing which is intended to be copied is written with ink containing either gum, sugar, treacle, glycerine, or some such substance, which causes the writing to retain moisture, so that a copy of it may be produced even after the original writing has become dry, by being simply damped and pressed.

The following formula requires no press, but may be copied by placing a damp sheet of copying-paper on the writing intended to be copied; above this sheet of copying-paper a sheet of ordinary writing-paper must be placed and then pressed with a paper-knife.

Copying-Ink.

Mix—Thirty grains of extract of logwood.
Seven grains of crystal. sod.
Half an ounce of water.
Boil till dissolved; then, while stirring

well, add thirty grains of glycerine, one grain of chromate of potash, previously dissolved, and four grains of powdered gum-arabic.

Indestructible Ink for Deeds, etc.

Dissolve twenty-five grains of powdered gum copal in two hundred grains of lavender oil by the aid of a gentle heat; then add two and a-half grains of lamp-black, and half a grain of powdered indigo.

Another for the same purpose.

In eighteen fluid ounces of water boil shellac, two ounces, and borax, one ounce; when cold filter and mix with one ounce of gum-arabic dissolved in two ounces of water, to which add powdered indigo and lamp-black as much as may be required.

Red Ink

Is commonly prepared by boiling Brazil wood, two ounces, in thirty-two ounces of water, to which add, after the decoction has been strained, half an ounce of chloride of tin, and one drachm of powdered gum-arabic; then evaporate to sixteen fluid ounces.

Or,

Dissolve carmine, one drachm, in half a drachm of liq. ammon. fort. (sp. gr. 880), then dissolve twenty grains of powdered gum-arabic in three ounces of water, which add to the dissolved carmine.

Blue Ink

May be prepared by dissolving two or three ounces of sulphate of indigo in a gallon of water; or by rubbing together one ounce of oxalic acid, and two ounces of fine Prussian blue, to which add one quart of boiling water.

Ink Powder

May be prepared by mixing—

Powdered galls, four ounces.
Powdered sulphate of iron, one ounce.
Powdered gum-arabic, one ounce.
Powdered white sugar, half an ounce.
Powdered cloves, one drachm.

To these proportions add of water one quart, and macerate for an hour or two.

Note, the quantity of sulphate of iron is small because it has been dried, and has thus lost the weight of water evaporated.

Ink in Cakes

May be prepared by evaporating good ink to dryness in shallow dishes, but the best results are obtained by dissolving Chinese ink in water.

Marking-Ink.

This substance is so well known that little may be said on the subject. The process is founded on the chemical fact, that by applying heat to a salt of silver in combination with other ingredients, the writing becomes immediately, and should remain permanently black; the formula of Professor Redwood is a good one:—

Dissolve separately—nitrate of silver one ounce, crystal carbonate of soda one and a half ounces; mix the solution, and collect the precipitate on a filter; wash well, then introduce the moist precipitate into a mortar, and add eight scruples of tartaric acid; triturate till effervescence ceases; then add of liq. ammoniæ fort. a sufficient quantity to dissolve the tartrate of silver, to which add four fluid drachms of archil, four drachms of powdered white sugar, and twelve drachms of powdered gum-arabic, and make up to six fluid ounces, if required, with distilled water.

Crimson Marking-Ink

Is prepared by adding six grains of carmine to the liquor ammoniæ of the above formula, but it soon loses its crimson color, and becomes, like other marking-inks, a black color.

In conclusion, I cannot lay aside this subject without referring to the beauty, brilliancy, and variety of color pro-

duced from aniline, whereby we can procure any shade from the most brilliant scarlet to the most sombre black, and should we at any time be deprived of ink from the present sources, we may rest content that so long as our coal fields yield their sparkling riches, so long may we, without fear, look forward to an unlimited supply of "Our Writing Fluids."—*Chemist and Druggist.*

Diamond Cement.

Isinglass, soaked in sufficient water to render it soft, is dissolved by the aid of a gentle heat, in as small a quantity of acetic acid as possible. In each ounce of this solution dissolve 5 grains of ammoniacum, and add a solution of 15 grains of mastic, previously dissolved in 90 minims of alcohol, 65 c. p. Mix well together.—*Canadian Pharmacist.*

Verbena Water.

A good article may be made in the following way:—

Take Rectified spirit .....1 pint.
Grass-oil (verbena-oil)..3 drachms.
Oil of lemon-peel.....2 ounces.
Oil of orange-peel.....½ ounce.

Mix; let it stand for a few hours, filter if necessary, and fill in bottles. A very much superior article, also sold in commerce under the name of *Extrait de Verbène*, is made according to the following recipe:—

Take Rectified spirits.....1 pint.
Oil of orange-peel.....1 ounce.
Oil of lemon-peel.....2 ounces.
Oil of lemon.....1 drachm.
Grass-oil (verbena-oil).2½ drachms.
Ess. of orange-flowers.7 ounces.
Essence of tuberose ...7 "
Essence of rose.....½ pint.
—*Ibid.*

Silvering Glass.

The fluid for silver-plating glass consists essentially of two liquids, one being an ammoniacal solution of nitrate of silver, and the other a tartrate or other similar salt. These are mixed before application and poured over the glass plate or into the glass vessel, when the silver salt will become decomposed, metallic silver being deposited. When this has acquired the desired thickness, the rest of the fluid is poured off, the plate washed with pure water, and dried. The solutions are prepared according to the following formula:—

Take Nitrate of silver.....2 ounces.
Water.....3 fl. "
Rectified spirits.....3 fl. "
Dissolve and add
Liquor ammoniæ....1 fl. ounce.

After letting the mixture stand for a short time filter, and add to each ounce of it

Grape sugar.....¼ ounce.

previously dissolved in a mixture of

Water.....½ pint.
Rectified spirits.....½ "

After three or four hours' repose filter, and apply to the surface of the glass, which should be warmed to about 160° F.—*Ibid.*

Use of Hæmatoxylin for Staining Animal Tissues.

In the *Philadelphia Medical Times* of July 1 Dr. J. W. S. Arnold thus describes his method of using hæmatoxylin in animal microscopy, as originally suggested by Müller.

The ordinary logwood extract is finely pulverized in a mortar, and about three times its bulk of alum (in powder) added. The two ingredients are well rubbed up together, and mixed with a small quantity of distilled water. The *complete admixture* of the alum and hæmatoxylin is necessary, and this will require fifteen to twenty minutes' vigorous stirring. More water may now be poured on, and the solution, after filtration, should present a clear, somewhat dark violet color. If a dirty red is obtained, more alum must be incorporated, and the mixture again filtered. By always having an excess of both alum and hæmatoxylin in the mortar, a satu-

rated solution can be obtained, which, after filtration, may be combined with alcohol,—one ounce of the logwood fluid with two drachms of seventy-five per cent. alcohol. I have found that a much better color can be had by allowing the mixture, after thorough trituration, to stand for several days before filtering and adding the alcohol. Should a scum form on the surface of the liquid after it has been some time made, a few drops of alcohol and careful filtering will be all that is required. With a strong solution, such as has been described, the coloring is very rapid, requiring but a few minutes; whereas, if a slower tinting be desired, the fluid may be diluted with a mixture of one part alcohol and three parts water. Whether the tissue has been previously hardened in alcohol or in any of the chrome compounds, it is colored equally well,—the nucleus of a most brilliant purple; the cell-body, of a distinct neutral tint. An *over-staining* causes an almost perfect blackening of the nucleus, while the protoplasm becomes purple. In many instances where carmine has given but indifferent results, hæmatoxylin will be found to succeed most admirably. As to the stability of the coloring, I need only remark that specimens tinted and mounted in December, 1869, show as perfectly as when first put up.

I would conclude with the following method of treating pathological new formations (histoid tumors), etc.:—

The cut is placed for the required time in the hæmatoxylin fluid, and is then immersed in distilled water to remove the crystals of alum which might otherwise adhere to the surface of the tissue. From water the section is transferred to seventy-five per cent. alcohol, when, after soaking for from ten to fifteen minutes, it is clarified in oil of cloves, and may be either mounted immediately in balsam dissolved in chloroform, or in damar varnish.

It might appear contrary to all that has been written on the subject of treating tissues to advise that the section should only be placed in moderately strong alcohol before clarifying and mounting, but by means of oil of cloves and the process I have given, none of the curling up and distorting will follow, which cannot be avoided when absolute alcohol, benzole, or turpentine is employed to dehydrate and render transparent.

Artificial Milk used during the Siege of Paris.

At a meeting of the Liverpool Chemists' Association, Mr. J. T. Armstrong exhibited specimens of artificial milk and butter used by the inhabitants during the siege of Paris. The mode of preparing the "siege milk" is as follows:—47 grms. of finely-powdered sugar, 30 grms. of the white of an egg, or a sufficient proportion of gelatine, one part of warm water, and about 1 grm. of carbonate of soda, are mixed with 60 grms. of a pure and tasteless oil, or fat obtained by frying; by agitation a pasty liquid is obtained, which, when diluted with about an equal bulk of water, has the same nutritive value and chemical composition as milk. —*Canadian Pharmacist.*

To Coat Steel with Silver.

In order to deposit silver upon steel it is necessary to first coat the article with copper. The solution which I have found to answer best for this purpose is composed of

Carbonate of potassa	4 ounces.
Sulphate of copper	2 "
Liquid ammonia (about)	2 "
Cyanide of potassium	6 "
Water (about)	1 gallon.

Dissolve the sulphate of copper in boiling distilled or rain water, and when cold add the carbonate of potassa and ammonia. The precipitate when formed is redissolved. Now add cyanide of potassium until all the blue color disappears. Then filter, and work the solution warm with active battery power, using a copper anode. After the article has received a sufficient coating it may be

scratch-brushed, and is then ready for the silvering solution.—*Dental Cosmos.*

How to Clean Bones.

℞ Soda ash.....1 pound.
Lime (burned).....½ "
Hot water.....3 quarts.

Mix, and soak the bones for twenty-four hours in the liquid; wash them thoroughly and bleach them.—*Druggists' Circular.*

Moth Powder.

Lupulin (the flower of hops), 1 drachm; Scotch snuff, 2 ounces; camphor gum, 1 ounce; black pepper, 1 ounce; cedar saw-dust, 4 ounces; mix thoroughly, and strew among the furs and woollens to be protected.—*Druggists' Circular.*

To detect Sulphuric Acid in Vinegar.

An ounce of the vinegar to be examined is put into a small porcelain capsule, over a water-bath, and evaporated to about half a drachm, or to the consistence of a thin extract; when cool, half a fluid ounce of stronger alcohol is to be added and thoroughly triturated. The free sulphuric acid, if present, will be taken up by the alcohol to the exclusion of any sulphates. Allow the alcoholic solution to stand several hours and filter; to the filtrate add one fluid ounce of distilled water, and evaporate the alcohol off by gentle heat, over a sand-bath; when free from alcohol it is set aside for several hours, and then again filtered. To the filtrate, acidulated with hydrochloric acid, add a few drops of a solution of chloride of barium, and a white precipitate of sulphate of barium will result, if the sample of vinegar has been adulterated with sulphuric acid.—*American Journal of Pharmacy.*

Catarrh Snuff.

℞ Lundyfoot snuff,
Black rappée snuff, āā... ℥ i.
Powd. asarabacca..... ℥ iv.

Mix well.—*Druggists' Circular.*

Delfort's Baking Powder

Is said to consist of

Alum.....5 ounces.
Bicarbonate of soda.....2½ "
Bicarbonate of ammonia..½ "
Arrowroot.....4 "

As we have never had occasion to use it, we cannot say whether it is "good" or not.

Another powder, which is probably better than Delfort's, is made by mixing

Tartaric acid... ..... 8 ounces.
Bicarbonate of soda..... 9 "
Arrowroot or rice flour...10 "

—*Druggists' Circular.*

Preservation of Subjects for Dissection.

In the *Progreso Medico*, April 1, we see it stated that a certain Professor Gaillery has submitted to the approbation of the Royal Academy of Medicine of Belgium a very simple method of preserving *subjects*. He placed a dead body, brought from the hospital of St. Peter, on a table in the amphitheatre, and covered it completely with a sheet wet with a solution of phenic acid in the proportion of two per cent.; afterwards, every four or five days he pours over the body a certain quantity of the same solution. The first result was the absence of mephitic emanations; and in examining the body from time to time it was found to preserve almost the same appearance as it had at death. The walls of the abdomen gradually sank. The experiment has lasted for six months, and the body remains in the same condition. This is a most important discovery.—*Medical Press and Circular.*

Cement for Glass and Porcelain.

The very best of this kind, which will withstand moisture, and even a moderate degree of heat, is the one proposed by Berzelius, and for the last year or so sold by enterprising venders in the streets of New York. It is nothing but the curd of skimmed milk (obtained by the addi-

tion of vinegar or rennet), beaten to a paste with quicklime in fine powder. A better quality than this is obtained in the following way:—Add vinegar, one-half pint, to skimmed milk one-half pint; mix the curd with the whites of five eggs, well beaten, and enough quicklime to form a paste.—*Druggists' Circular.*

To Re-japan.

Old trays may be re-japanned by the following process. First clean them thoroughly with soap and water and a little rotten stone; then dry them by wiping and exposure to the fire. Next, get some good copal varnish, mix it with some bronze powder, and apply with a brush to the denuded parts. After which set the tea-tray in an oven at a heat of 212° to 300° until the varnish is dry. Two coats will make it equal to new.—*Technologist.*

To Etch on Glass.

To etch on glass with fluor spar, cover the glass with beeswax by melting the wax and running it over the glass, about one sixteenth of an inch thick, then write on it with a needle, after which sprinkle some fluor spar upon the writing, and pour sulphuric acid upon it. Let it stand for ten or twelve hours, then wash off the superfluous acid, take off the wax and wash the glass clean. It will then be seen that the fluor spar has eaten away the glass on those parts not protected by the wax.—*Technologist.*

Hard and Soft Boiled Eggs.

It is well known that a soft-boiled egg is more easily digested than a hard-boiled one; but the difficulty is in the white, not in the yolk. Experiments have shown that the gastric juice will not act readily on the tough, tenacious structure of firmly-coagulated white of egg, even when cut in pieces as small as peas—or as fine as people usually chew their food—while it acts with facility on the more brittle yolk. To cook eggs so that they will be easily digested, put them into boiling water sufficient to cover them, and let them remain ten or fifteen minutes; keep the water nearly up to the boiling point, but do not let it reach that point. Fresh eggs will cook sooner than old ones, and small ones than large ones. By this process the yolks will be well cooked, while the white does not become tough and hard to digest.—*Food Journal.*

New Detonating Mixture.

A new detonating mixture is made by bringing together equal parts of nitrate of potash and of acetate of soda; these substances, when exposed to heat, enter into new combinations, in which the salts are converted into gases, with a violent explosion.—*Harper's Monthly.*

Ether Glue.

An excellent liquid glue, according to Prof. Maisch, is made by dissolving glue to saturation in nitric ether. This glue solution cannot be made too thick, as the solvent will only take up a certain amount, and is twice as tenacious as that made with hot water. It is much improved, and becomes very capable of resisting dampness, by dissolving some caoutchouc, previously cut into very small pieces.

Painting on Tin Foil.

In the *Comptes Rendus* for April, is an elaborate memoir on this subject, by C. Daniel.

To Cut Glass with a File.

The *Polytechnic Journal* says to cut glass with a file it is only necessary to moisten it with a solution of camphor in oil of turpentine.—*L'Union Pharmaceutique.*

Currant Wine.

Take two quarts of currant juice and twenty-four pounds of good loaf or

twenty-five pounds of lump sugar to one anker, dissolve the sugar in fresh, well-tasted spring water, mix both in the barrel, fill it up to the bung-hole with well-water, put the barrel in a chamber which is not too warm, or in a cellar which is airy but not too deep; collect the juice, which is driven out of the bung-hole by the fermentation, in a vessel placed underneath it, and pour it back again or else supply the deficiency every day by fresh well-water, up to the bung-hole. After six to eight weeks bring the wine, if bubbles no longer rise from the bottom, on the stand in the cellar, and bung the barrel, after six to eight weeks, when not the slightest noise is to be heard. Draw it off carefully into bottles, first in February or March, in the best way through a quill, in order that the wine may appear clear; cork the bottles without sealing them, and store them up, standing. The greater attention you pay to this, the greater will be your joy at the wine. In this recipe there is given at the same time a recipe for the manufacture of wine from most berries and fruits. For it is self-evident, that plums, blackberries, cherries, huckleberries, mulberries, apricots, pears, apples, etc., will also yield their must.—*Fruit and Wine Journal.*

Apparent Death and its Detection.

Dr. M. Rosenthal has found (*Wiener Medizinische Presse*, May 5 and 12) that the susceptibility of the muscles to the faradic current persists from one and a half hours to three hours after death, and is then extinguished. It continues longer in individuals who have died of acute affections than in those who have succumbed to chronic diseases. In a case of apparent death, he was able to demonstrate, by showing that the muscles still responded to the interrupted current, that life was not extinct, although death from convulsion (hysterical) was supposed to have taken place thirty-six hours before. He concludes, therefore, that the electrical current renders the diagnosis of death possible even before the occurrence of rigor mortis, and may be looked upon in cases of apparent death as the most reliable and delicate test of the irritability of the muscles and nerves.—*Phila. Med. Times.*

Diamond Cement.

Diamond cement, so very useful for repairing broken china, ornaments, jewelry, nicknacks, is made as follows. Take half an ounce of gum ammoniac and a tablespoonful of water; melt them together till they form a milky fluid. Then take one ounce of isinglass and six wineglassfuls of water; boil together till the quantity is reduced one-half; then add one wineglassful and a half of strong spirits of wine. Boil this mixture for three minutes, and then strain it through muslin, adding after, while hot, the ammoniacal fluid formerly made. Finally add half an ounce of tincture of mastic resin. The cement thus made is best preserved in small phials, in which it sets when cold. When required for use, it can be liquefied by placing the phial in a cup of boiling water.—*Technologist.*

Ink.

In the recipes generally given for making ink, it is recommended to *boil* the ingredients. This is a very serious mistake. It should always be made with cold water. By this latter process, more time is of course necessary to make it; but then the ink is very superior, and entirely free from extractive matter which has no inky quality, and which only tends to clog the pen and to turn the ink ropy and mouldy. Take gallnuts, broken, one pound; sulphate of iron, half a pound; gum acacia and sugar candy, of each a quarter of a pound; water, three quarts. Place the whole of these ingredients in a vessel where they can be agitated once a day; after standing for a fortnight or three weeks the ink is ready

for use. Logwood and similar materials are often advised to be used in conjunction with the gallnuts; but they serve no good purpose, unless it be to make a cheaper article which fades rapidly.—*Technologist.*

Indorsing Ink.

Indorsing ink, black and colored. To make one pound, take balsam of copaiba, nine ounces; lamp-black, three ounces; indigo and Prussian blue, of each one ounce and a half; Indian red, three quarters of an ounce, and dry yellow soap, three ounces; grind all these ingredients on a slab to an impalpable smoothness, and the ink is then fit for use. The colors may be varied for different inks, such as chrome yellow and indigo for green ink; carmine and Indian red for red ink, vermilion, verdigris, etc. For such the lamp-black and other coloring are to be left out of the first recipe, but the other ingredients remain the same.—*Technologist.*

To Fasten Leather on Metal.

To fasten leather upon metal, you should first wash the metal with a hot solution of gelatine, and steep the leather previously in a hot infusion of gallnuts. Then press the leather upon the surface of the metal and allow it to cool, when it will be found to adhere so firmly that it cannot be separated without tearing.—*Technologist.*

Cheap Scent for Hair Oil.

Oil lemon.....	2 oz.
" bergamot.....	1 oz.
" lavand.,	
" caryoph.,	
" cassia, of each.....	½ drachm.

—*Canada Pharmacist.*

Arsenious Acid and Albumen.

The preservation of albumen for manufacturing purposes is a problem of much interest, in view of the great use of this substance in the arts, one method consisting in the addition of a slight amount of arsenious acid, or arsenite of soda. The use of the former is, however, sometimes inconvenient, on account of the great insolubility; and that of the latter is occasionally objectionable on account of its alkaline action affecting the application of the albumen. For the purpose of obviating these objections, Paraf suggested the boiling of the arsenious acid with glycerine, in which it is quite soluble; after allowing the solution to cool, and to stand for twenty-four hours, a few drops may be added to the albumen. The same substance can be added to gum-arabic, paste, and other substances, to prevent fermentation, putrefaction, and the development of fungi. It will, of course, be understood that arsenic in this preparation is highly poisonous.—*Harper's Monthly.*

Transparent Green Varnish.

A beautiful transparent green varnish is made by taking a small quantity of "Chinese blue," with about twice the amount of finely-powdered chromate of potash, and stirring these in copal varnish thinned with turpentine. A thorough grinding of this mixture must be made for the purpose of intimately incorporating the ingredients, as otherwise it will not be transparent. A preponderance of chromate of potash gives a yellowish shade to the green, and a deficiency increases the amount of blue. This varnish, thus colored, produces a very striking effect in japanned goods, paper-hangings, etc., and can be made very cheaply.—*Harper's Monthly.*

Gilding and Silvering Silk.

According to a formula published by Grüne, for silvering or gilding silk, the silk is to be soaked with a 5 per cent. solution of iodide of potassium, and dried; then (in non-actinic light) dipped in a 5 per cent. solution of nitrate of silver, containing a few drops of nitric

acid, and well drained; next exposed for a few minutes to sunlight, and then dipped in a 2 per cent. solution of sulphate of iron. It immediately becomes gray, from reduction of metallic silver, and, after washing and drying, only requires burnishing in order to acquire the metallic lustre. By repeating this treatment, varied, however, by adding a little free iodine to the solution of iodide of potassium, the silver deposit becomes stronger. By laying the silvered silk in a very weak solution of chloride of gold, the silver becomes chloride, and gold is deposited; and by then removing the chloride of silver by a solution of hyposulphite of soda, washing, drying, and burnishing, the appearance of gilding is produced, if the deposit of metal be sufficiently thick. The purest chemicals must be used in order to secure satisfactory results.—*Harper's Monthly.*

House Drainage.

One of the most important inquiries in taking a house should be as to the efficiency of the drains, for upon this will often depend its healthfulness, and therefore its suitability for habitation. It is not sufficient that the local sanitary authorities of the village, town, or neighborhood in which a house is situated, have done their utmost to secure healthfulness by the provision of stringent laws and as perfect a system of general drainage and sewerage as the means and advice at their disposal are capable of; much also depends upon the individual drainage arrangements of each house; so that, in spite of all their precautions, much of the ultimate success of their labors is dependent upon the builders of houses, over whom, in the details of their internal arrangements, they cannot well exercise any absolute control.—*Food Journal.*

Colored Cements.

A writer in *Comptes Rendus* states that colored cements which harden rapidly may be made as follows: He takes a solution of silicate of soda (sp. gr., 1.298) and adds to it, while stirring, first pulverized and previously washed, lixiviated chalk, so as to form a thick mass, like butter, to which are added, for coloring purposes, the following substances: Finely pulverized sulphuret of antimony for black, iron filings for gray, zinc dust for whitish gray, carbonate of copper for bright green, oxide of chromium for deep green, cobalt blue for blue, red lead for orange, vermilion for bright red, and carmine for a violet hue. This cement hardens within from six to eight hours, and may afterward be polished, becoming like marble.—*Druggists' Circular.*

White Gutta-percha.

The *Journal of Applied Chemistry* gives the following method of preparing this for dentists' use and for other purposes: Four ounces of pure gutta-percha are digested with five pounds of methyl-chloroform until the solution is thin enough to pass through filtering-paper. It is then filtered (an additional pound of chloroform will facilitate this), and should then be clear and nearly colorless. Alcohol is now added in sufficient quantity to precipitate the gutta-percha in a voluminous white mass, which is washed with alcohol, pressed in a cloth, and dried in the air. It must finally be boiled in water in a porcelain vessel for half an hour, and while still hot rolled into sticks. The chloroform can be separated from the alcohol by adding water, and the alcohol recovered by distillation.—*Druggists' Circular.*

Unguentum Diachyli.

(HEBRA'S.)

℞ Olei olivarum opt., ℥ xv.;
Lithargyri, ℥ iij–℥ vj.;
Coque; dein. adde
Olei Lavandulæ, ℥ ij.
Misce. Fiat unguent.

—*Phila. Med. Times.*

Opal-Glass.

Artificial sulphate of baryta, spread with soluble silicate of soda or potassa

upon glass, imparts to it a fine milk-white color. After a few days the baryta has formed a solid mass with the silicic acid, so that it will withstand the action of hot water. By means of a high temperature, this layer is changed into a fine white enamel.—*Polyt. Notizblatt*, 1871, No. 7, in *Pharmacist.*

Testing Ethylic and Acetic Ethers for Alcohol. (C. Frederking.)

In a graduated glass tube equal volumes of ether and anhydrous glycerine are thoroughly mixed; the alcohol contained in the ether is taken up by the glycerine, and its volume increased, whereas that of the ether decreases by the amount of alcohol contained in it. Ether may therefore be deprived of water as well as alcohol previous to its rectification, in order to produce it pure, and the glycerine mixed with the water or alcohol may again be obtained pure by evaporation. In this manner essential oils may also be tested with glycerine, for the amount of alcohol fraudulently added.—*Polyt. Centralblatt*, 1871, p. 728, in *Pharmacist.*

Caoutchouc Enamel, for Metallic Surfaces.

Gutta-percha or India-rubber is dissolved in oil of turpentine or benzine, sulphur is then added to the solution in the proportion of half a pound to every pound of caoutchouc, and some powdered feldspar, or gypsum, or pumice-stone, and the mixture colored by any mineral pigment. The mass thus obtained is then spread upon the metal to be covered, and exposed to a temperature of about 120–160° C. A very shining enamel is formed, capable of receiving a very good polish. This process was patented by W. R. Lake, of London, for G. T. Chapmann, in New York.—*Ber. d. D. Chem. Gesellschaft zu Berlin*, 1871, No. 9, in *Pharmacist.*

Platinum Black.

Prof. J. Lawrence Smith has found that the platin-chlorides of the alkalies can be readily reduced at a temperature of from 400° to 500° F., by means of ordinary illuminating gas. The operation is simply performed by placing the double chloride in a porcelain capsule covered with a piece of mica, and applying heat by means of a Bunsen burner provided with a rosette. Meantime, the gas is conveyed to the interior of the capsule by a tube passing through an orifice in the mica cover. The product is to be thoroughly washed with water to remove alkaline chlorides, and the residue, dried at 220° F., is ready for use.—*Amer. Chemist*, in *Pharmacist.*

New Method of Preparing Potassium.

Prof. A. E. Dolbear has obtained this metal, in small quantity, by reducing the di-potassic sulphide by means of iron. The salt in question is intimately mixed with iron filings, and subjected to a bright red heat, in a suitable distillatory apparatus, the products of distillation being received in naphtha. The reaction is simple, and may thus be represented: $-K_2S + Fe = FeS + K_2$. The author suggests a similar method for the preparation of sodium.—*Ibid.*, in *Pharmacist.*

Varnish for Light Colored Woods.

Dissolve 2½ ounces of gum shellac in one pint of 95 per cent. alcohol, slightly heated, then boil for five minutes with 5 ounces of freshly burned animal charcoal (bone black); filter while hot. If the color be not entirely removed by this process it may be repeated with an additional quantity of bone black. The varnish should be applied in a warm room, which is free from dust. It dries quickly, and will not "bloom."—*Physician & Pharmacist.*

BIBLIOGRAPHY.

A Manual of Chemical Physiology, including its Points of Contact with Pathology. By J. L. W. Thudicum. New York: Wm. Wood & Co.

This excellent treatise of nearly two hundred pages is a model of conciseness and elaborateness. We are informed, in its preface, that "any medical student who possesses the information which it contains, will be enabled to meet the requirements, so far as concerns this subject, of any of the examining and licensing bodies in this country and abroad." We certainly feel disposed to guarantee this, and would be ashamed to express an opinion as to how many "American" professors of the branch own such rich possession.

To any one desirous of being acquainted with the latest aspects of the science of chemico-physiology, we heartily commend the volume as a safe and sufficient guide.

On Food. Second Edition Enlarged and Revised. By H. Letheby. New York: Wm. Wood & Co.

Unless our sagacity is at fault, the body of this book was printed abroad, the title-page alone being of home production. The beauty of the print seems to mark it as of English rather than American origin. We have read this memoir of 250 pp. carefully, and cheerfully testify to its value and usefulness. In it the practitioner will find a great mass of information, both as to the curiosities and the practical portions of the subject on which it treats—information, too, much of which is not generally known, and has hitherto been so scattered as to be quite inaccessible to the ordinary practitioner. The memoir, as it now stands, is a revision and extension of the four Cantor Lectures delivered by its author in 1868.

Hysterology: A Treatise Descriptive and Clinical of the Diseases and the Displacements of the Uterus. By Edwin Nesbit Chapman, M.D., late Professor of Obstetrics, Diseases of Women and Children, and Clinical Midwifery in the Long Island College Hospital. New York: Wm. Wood & Co. 1872.

If any one buys this work as a guide for practice, we think he will be wofully disappointed. The author's pathology of uterine disease is simply congestion, to the consideration of which eight chapters are devoted; the remainder of the twelve being occupied solely with introductory matter, such as the normal anatomy and physiology of the viscus, the methods of examination, etc.

The book is indeed chiefly a record of dispensary and other cases, of which three hundred and fifty-seven are described with more or less detail, and the result, in the majority of these cases, is noted—"Paid but one visit." We congratulate the author on the satisfactory manner in which he has announced his experience to the profession, and the rich mine he has offered to enthusiastic gynæcologists. The sagacity and enthusiasm which will be required to reduce the ore provided by

the author, is shown not merely by the "result" already alluded to, but also by the following extract, which is, in all honesty, a fair representative of most of the records. Thus, case cxxxiii., after detailing symptoms: "Cause, labor; treatment, four weeks; general remedies." Or cases cxli., cxlii., cxliii., cxliv., etc.: "Treatment, none." We commend the work especially to imaginative gynæcologists, who can readily fill up all the needful blank.

THERMIC FEVER, OR SUNSTROKE. By H. C. WOOD, JR., M.D. J. B. Lippincott & Co., Philadelphia.

THIS memoir, to which the Boylston Prize was awarded, is an experimental and clinical study of the subject.

It attempts to show that sunstroke is simply overheating; that the symptoms are those of an intense irritative fever; and that the proper remedy is the abstraction of heat by means of cold affusion, cold baths, or ice-rubbings.

NEW REMEDIES.

THERAPEUTICS.

EXPERIMENTS ON THE PHYSIOLOGICAL ACTION OF GERMAN ACONITE.

BY RUDOLF BÖHM AND L. WARTMANN.

The authors made a great number of experiments with Merk's aconitia. The general symptoms induced were similar to those seen by previous experimenters. The influence upon special organs, as far as studied, may be arranged under four heads:—

1. The influence upon the nervous system of frogs was studied by the method of Bezold. The result they obtained was, that the nerve-trunks are not affected, but that the paralysis of aconite poisons is central. This result is in opposition to that of Achscharumow's and Weyland's experiments, who shortly after death found that the peripheral nerves could not be excited by the induction current, whilst the muscles could be; also is in opposition to Weyland's delineation of the muscle-curve in aconite poisoning. The ascending portion of the curve goes, according to Weyland, not directly upperwards, but holds itself for a long time after the first third of the line upon a level, and the return of the muscle to its normal position follows very slowly: the more slowly, the more profound the poisoning is. Rudolff and Böhm, however, found that the pen of a modern myographion traced the same curve with a muscle from a poisoned and unpoisoned frog.

The authors appear to think it probable that the central paralysis is due both to a lessening of the sensibility, so that the sensitive cells do not feel the excitation and do not give origin to an impulse to act upon the motor cells, and also to a direct paralyzing influence upon the motor cells themselves. From numerous experiments made in accordance with Türk's method, the authors conclude that the aconite first affects the central organ, diminishing first the reflex capability (reflexvermögen) of the sensitive spinal ganglia, and producing a diminution in the activity of the motor ganglia which commences somewhat later, but deepens into entire paralysis. The peripheral nerve and muscle are not at all affected, except a perceptible stimulation of the peripheral intra-muscular nerve endings.

2. *Influence on the Heart.*—According to the earlier experiments of Achscharumow and Böhm, the action of aconite on the heart is to first increase the rapidity of its beat, afterward to slow it, and render it irregular until the viscus stops in diastole. The inhibitory nerves are paralyzed, whilst the excito-motor centres remain excitable; the heart-muscle itself loses its excitability. The experimenters found that the central blood-pressure in rabbits is first heightened, afterwards lessened, as it is throughout in dogs and cats. In all cases is the amount of work done by a single heart-stroke perceptibly increased; the blood pressure finally sinks in the last stages to a minimum; and when small poisonous doses are employed, a paroxysmal influence is perceptible. Achscharumow's theory, that the primary temporary rapidity of the heart's action is due to a vagus stimulation, passing into paralysis, was found not to be true, since the same phenomenon followed the use of the aconite when the vagus had been previously cut; also the same phenomenon was observed in animals previously poisoned with atropia. The authors, under a reference to the recent work of Heidenhain, which throws doubt upon the laming influence of atropia upon the inhibitory action of the vagi, deny that there is in aconite poisoning the so-called arithmetical slowing of the pulse, from the altered blood-pressure acting upon the intra-cardiac inhibitory apparatus. They consider this very probable from the similarity of the curves of Heidenhain and from their own. Besides, the propulsive power of the heart is very distinctly weakened. This circumstance leads to the idea of paralysis of the heart-muscle; but the authors do not believe in this, notwithstanding their own earlier experiments, because very often after the cessation of the ventricular beat in diastole they have seen the auricle continue to pulsate, and because by stimulation of the divided vagus, after already a paralytic influence from the aconite, a marked ascent of the diminished blood-pressure could be seen hand-in-hand with a slowing of the pulse. This increase in ten or twelve experi-

ments disappeared as soon as the irritation of vagi ceased. The authors are not able to give any satisfactory explanation of the action of the aconite upon the heart. When sufficiently large doses of digitalis were given in aconite poisoning the height of the single pulse excursion of the mercury was increased three or four fold, the frequency of the beats being at the same time lessened one-third.

3. *The Influence of Aconitia on the Vaso-motor Centres.*—This was investigated by studying whether irritation of a sensitive nerve induced reflex vaso-motor contraction or not. The latter was found to be the case. This absence of effect might evidently have been due either to a paralysis of the vaso-motor centre or a disturbance of the paths of impulse to the centre. The fact that direct stimulation of the medulla was followed by ascent of the blood-pressure until the last stages of aconite poisoning, showed that it was the latter paths of conduction rather than the vaso-motor centres themselves which were influenced.

4. The influence on the respiration was found to be due to an action upon the spinal centres of the respiratory muscles.—*Schmidt's Jahrbuch.*, August 8, 1872.

ON DOSES.

Prof. E. H. Clarke has a paper on Doses in a late number of the Boston *Medical and Surgical Journal.* After speaking of the rules of Gaubius and Young (see U. S. D.), he says:—

"Physiological experiment has shown that the weight of animals is not only as important an element in apportioning doses of drugs as age, but is probably a more important one than that. Thus Dr. Fraser, of Edinburgh, in his recent admirable monograph on Physostigmia and Atropia, has shown that the minimum lethal dose of sulphate of physostigmia for rabbits is .04 grain for every pound. M. Claude Bernard has called attention to the fact that in physiological experiments with drugs on animals, the dose should vary with the weight of the animal. Clinical observation shows that men in this respect are not unlike other animals; and that in the administration of remedies the dose should vary with the weight of the patient, in order to obtain the best therapeutical result. Guided by this principle, it is easy to give a rule for doses that is more exact and more easily remembered than the table of Gaubius or the equation of Dr. Young.

"Assuming the average weight of an adult to be one hundred and fifty pounds, for whom an appropriate dose is 1 or one drachm, the dose of most medicines must be increased or diminished in the proportion of the weight of the patient to that number of pounds. This

proportion is represented by a fraction whose numerator is the patient's weight and whose denominator is 150. If a child at birth weighs six pounds, the appropriate dose for it would be $\frac{6}{150}$, or $\frac{1}{25}$; if it weighs ten pounds, $\frac{10}{150}$, or $\frac{1}{15}$. A child two years old, weighing twenty pounds, would require $\frac{20}{150}$, or about $\frac{1}{7}$ of an adult dose; or more precisely, $\frac{1}{7\frac{1}{2}}$, which is exactly half way between the quantity indicated by the table of Gaubius for a child two years old and that indicated by Dr. Young's scheme for the same age. A person whose weight is two hundred pounds should have $\frac{200}{150}$, or $1\frac{1}{3}$ of an average adult dose. A child twelve years old, weighing seventy-five pounds, would require $\frac{75}{150}$, or $\frac{1}{2}$ of an average dose.

"The modifications of the average dose demanded by a patient's idiosyncrasy, disease, and other conditions than age or weight, are not, of course, met by the above rule."

Remarking on the paper of Dr. Clarke, the Editor of the *American Practitioner* says (Nov. 1st):—

"We do not think any scheme for proportionate doses recommends itself for simplicity more than the one proposed by Dr. R. O. Cowling in the first number of the *American Practitioner*: 'The proportionate dose for any age under adult life is represented by the number of the following birthday divided by twenty-five;' *i. e.*, for *one* year is $\frac{2}{24}=\frac{1}{12}$; for *two* years, $\frac{3}{24}=\frac{1}{8}$; for *three* years, $\frac{4}{24}=\frac{1}{6}$; *five* years, $\frac{6}{24}=\frac{1}{4}$; for *eleven* years, $\frac{12}{24}=\frac{1}{2}$, etc. As in the case of Dr. Clarke's rule, we here have a constant denominator; and it will be found on inspection that the quantities more nearly approximate to those given by Gaubius than those obtained by Dr. Young's rule."

Carbazotate of Ammonia to supersede Sulphate of Quinine.—In a recent communication to the Société de Thérapeutique de Paris, Dr. Dujardin-Beaumetz investigated the character, properties, and uses of carbazotate of ammonia (combination of ammonia with carbazotic, picric, or trinitrophenic acid), especially as a therapeutic successor to sulphate of quinine. After relating the successful employment of this salt in intermittent fever by Braconnot, Calvert, Aspland, Bell, Chazereau des Thureaux, Manopa, etc., Dr. Beaumetz gave the results of six cases treated by himself, and of various experiments carried on upon animals and man. Like quinine, carbazotate of ammonia diminishes the strength of the pulse, and brings on heaviness, cephalalgia, and even delirium, and is eliminated by the kidneys. These effects have again been stated by Dr. Beaumetz.

Dr. Beaumetz draws the following conclusions from the various facts observed in his six cases, or brought out by his experiments: Carbazotate of ammonia is very efficacious in intermittent fever; the

suppression of the paroxysms may be obtained by the use of two to four centigrammes (one-third to two-thirds of a grain) daily; given in these doses the drug has never had any bad effects, and seems to be better tolerated than sulphate of quinine; the physiological action of the substance closely resembles that of sulphate of quinine.—*London Lancet*, October 2.

Chloride of Potassium in Epilepsy (*Echo Méd. et Pharm. Belge*).—Dr. Lander advocates this salt as better than bromide of potassium in epilepsy. He finds it is more active, costs five-sixths less, and has not the inconvenience of the secondary effects of bromide of potassium. He begins with small doses, and has continued the use of the drug for several months without any bad consequences, in daily doses of from 3 grammes 50 to 5 grammes 50 (1 to 2 drachms). Moreover, Dr. Lander thinks that the bromide is converted into a chloride in the stomach, so he suggests the immediate use of the chloride.—*Philad. Med. Times.*

CAFFEINE.

In a recent number of *Pflüger's Archiv* Dr. Aubert describes some researches on this substance. Seeking to ascertain the proportion of caffeine or theine in a cup of coffee or tea, he arrived at numerical results somewhat above those of his predecessors. According to him, a cup of coffee, forming an infusion of 16.75 gr. of dry coffee-grains, contains about 0.1 gr. to 0.12 gr. of caffeine; and an infusion of 5 gr. to 6 gr. of dry leaves of very good tea contains about 0.1 gr. to 0.12 gr. of caffeine.

He studied the effect of this alkaloid on the nerves, muscles, respiratory movements, heart, and circulation. Caffeine increases the reflex excitability, and may produce tetanus. Dr. Aubert, with most authors, considers this a medullary tetanus; for it is not produced in the leg of a frog if the ischiatic nerves are cut, and it takes place in a limb the circulation in which has been stopped by a ligature before the subcutaneous injection of the caffeine into the skin of the back. An injection of 0.005 gr. into the skin of a frog, 1.20 gr. into the jugular of a rabbit, 0.200 gr. into the jugular of a dog or cat, produces tetanus. Dr. Aubert did not observe the weakening of excitability of the nerves referred to by Voit and others. According to him, the nervous excitability is altered only in the case of the nerve being plunged directly into a solution of caffeine. The muscular excitability is not affected so long as the caffeine is not applied to the muscles themselves.

Confirming Uspensky's experiments, Dr. Aubert shows that the production of apnœa by means of artificial respiration counteracts the development of the convulsions produced by caffeine,—a phenomenon similar to that which Rosenthal was the first to apply in cases of strychnic tetanus, and which appears to be applicable to all tetanus produced by reflex influence. As to the dose necessary to kill an animal apnœized, they were various; 3 gr. of caffeine did not kill a dog of 10 kilos. in which artificial respiration was produced. Other dogs in the same conditions succumbed to an injection of 0.25 gr. of caffeine. Caffeine at first produces an increase in frequency of the pulse, but a diminution of its bulk takes place very quickly (one minute after the injection), and sometimes determines the immediate death of the heart. Small doses, 0.1 gr. to 0.15 gr., injected into the skin produce no effect on the heart of a rabbit, while a dose of 0.25 gr. causes an acceleration of the heart and the respiratory movements. The increased rapidity in the heart-beats, and the rise of arterial pressure observed, may be attributed, Dr. Aubert thinks, to a paralysis, more or less complete, of the nerves proceeding from the ganglia to the muscles of the heart, and an excitation of the arresting apparatus of the heart. He does not agree with those who say it is caffeine which gives to coffee its principal qualities. He thinks the reviving action of coffee, which makes it such a favorite beverage, is not yet scientifically explained.—*Lancet*, October.

NEW OPERATION OF THORACIC PARACENTESIS.

Dr. T. J. Maclagan proposes, in the *British Medical*, the following method of performing thoracic paracentesis:—

In performing the operation, I would simply carry out Mr. Lister's instructions for opening a psoas abscess. A filtered solution of carbolic acid, of the strength of 1 in 100, should be put in the spray-producer, and the spray kept playing around the part at which the opening is to be made. The usual precaution should be taken of first inserting a grooved needle or small trocar and canula, previously dipped in carbolized oil (1 of carbolic acid to 7 of olive oil). The surgeon being satisfied as to the proper part for the incision, a free opening should at once be made into the pleural cavity by means of an ordinary bistoury, also previously dipped in the carbolized oil. The spray, of course, must be kept constantly playing over and around the wound, not only during all this time, but also while the fluid is running away, and must be continued till the dressing is applied. The best dressing is Lister's antiseptic gauze. A strip of this should be cut and folded

so as to form a square of six or eight inches; eight, twelve, or sixteen layers may be used, according to the amount of anticipated discharge; this should be applied over the wound as soon as the fluid is all away; until it is applied there should be no intermission in the play of the spray around the wound. If it be considered desirable to wipe the side before applying the dressing, this should be done with a cloth dipped in a solution of carbolic acid twice the strength of that used for the spray. A piece of some waterproof material should be applied over the gauze, and the whole fastened round the chest. The dressing should be changed on the following day, and afterwards every second, third, or fourth day, according to the amount of discharge. If it be desired to keep the wound open, this may be done by inserting a bit of the antiseptic gauze between its edges. The spray must always be kept playing on and around the wound while the dressing is being changed.

The chief advantages of the above mode of treatment are: (1) that the withdrawal of the fluid is effected more speedily and efficaciously than by any other mode; (2) that there is no trouble, either to physician or patient, with drainage-tubes or other inconvenience; (3) that the entrance of air, with whatever germs or other ingredients it may happen to contain, is efficiently guarded against; and (4) that the patient need not be confined to bed, but may even take open-air exercise before the wound is closed (if his general state permit it) without interfering with the efficacy of the treatment. In some cases this last recommendation is one of great importance.

ON THE PHYSIOLOGICAL ACTION OF ALCOHOL.

BY DR. VICTOR SUBBOTIN.

The question what alteration alcohol, after its ingestion, undergoes in the body is not yet fully answered. Magendie first showed that one hour after it was taken alcohol could be distilled from the blood, and other observers found it in other tissues or fluids, thus in the gall (Klencke, Percy); Wöhler, on the other hand, as well as Royer-Collard and Bouchardat, could not find it in the urine. Vierordt, and afterwards Becker, observed a lessening in the excretion of carbonic acid, and the latter an absolute decrease in the urea. According to Duchek, the alcohol is changed in the blood into aldehyde, which is burnt more readily than the sugar, which it saves and allows to be converted into fat. According to Buchheim, Masing, Setschenow, &c., this is not the case, for they found unaltered alcohol in the blood, in the expired air, and also in the urine of animals poisoned with alcohol. Also,

Lallemand, Perrin, and Duroy came to the same conclusion—that the alcohol exists as such in the body, is excreted as such, and does not undergo oxidation within the body. On the other hand, Thudicum asserts that the alcohol is almost entirely consumed in the body by oxidation.

The method of establishing the presence of alcohol employed by Dr. Subbotin consisted in the conversion of it into acetic acid by chromic acid. Sometimes he used the pure chromic acid, sometimes a proportional mixture of bichromate of potash and sulphuric acid. He mixed first the chrome salt or the chromic acid with the liquid to be tested, and then added the sulphuric acid much diluted, closed the vessel, and kept the whole warm for 24 hours.

The acetic acid was then obtained by distillation and its amount estimated by the use of a soda solution.

The experiments were made by Dr. Subbotin, on the principle of Pettenkofer's breathing apparatus. The diluted alcohol (29 per cent. of absolute) was thrown into the stomach of an animal through the opened œsophagus in quantities of 5 to 10 to 15 cubic centimetres. The expired air was first drawn through an absorption apparatus as follows:—

The air was first passed through a vessel full of distilled water, and then through a series of pipes filled with glass pearls, the first of the pipes containing chromic acid solution and the last two a strong solution of caustic soda. The first pipe was, during the experiments, warmed by means of a water bath.

Experiments on rabbits gave the following results:—

1. Already in the first five hours after the ingestion of the alcohol a not inconsiderable quantity of it was excreted by lungs, skin, and kidneys.

2. Through the skin and lungs at least twice as much alcohol was separated as through the kidneys, in opposition to the assertions of Lallemand, Perrin, and Duroy.

3. The amount of alcohol obtained is only a fraction of what is really excreted, because so much is lost in various ways [These are enumerated, but for them we refer the reader to the original paper.—Ed.], and because, further, the experiments only last some five or six hours, whereas excretion is lively even after twenty-four hours, if the dose has been large.

Dr. Subbotin then made, periodically, frequently repeated experiments, carried on until the excretion had ceased or nearly so, and came to the conclusion that, in the twenty-four hours after the ingestion of the alcohol, at least sixteen per cent. of it is excreted unchanged (or as aldehyde).

Although Dr. Subbotin has found a larger proportion of the alcohol excreted than was to have been expected, yet this does not prove that a portion of it is not used up in the system, nor does the absence of acetic acid in the blood disprove the oxidation of the alcohol, for the acid itself may be oxidized into carbonic acid and water at the moment of its formation.

The admission of the partial oxidation of alcohol, Dr. Subbotin thinks, does not show that it is really a food, for it lowers the tissue changes, as shown by the decrease of temperature and of the elimination of carbonic acid and urea; it is rather to be looked upon as a stimulant (Reizmittel).—*Schmidt's Jahrbücher*, August, 1872.

ON THE EXISTENCE OF PHENOL IN THE BODY OF ANIMALS, AND ITS INFLUENCE ON BLOOD AND NERVE.

Under this title Dr. F. Hoppe-Seyler has a paper of interest in *Pflüger's Archives*, for April, 1872, from which we translate the following abstract:—

Hoppe-Seyler first gives the somewhat contradictory testimony of Städeler, Buliginsky, Lieben, and Landolt, showing that the bulk of the evidence is in favor of the existence of carbolic acid, or something from which it is readily derived in urine, and states that his own experiments are strongly in favor of such existence. He says, however, that if a liquid be evaporated to a sirup, and then on distillation, after the addition of dilute sulphuric acid, yield phenol, no one can affirm, certainly, that the first liquid contained carbolic acid or one of its salts. This happens with cow and horse urine, as well as with canine and human urine; the difference being that the yield of the first two is large, that of the last two very small. This is precisely the proportion in which the urines contain hippuric acid and indican. That hippuric acid has no direct relation with the phenol obtained, Hoppe-Seyler considers settled. But it is otherwise as regards indican, and the author is inclined to believe that the phenol is actually derived from the indican.

Hoppe-Seyler also studied carefully the blood of cows and dogs, cow's gall, the liver and brain of dogs, in the method used in the case of the urine, with always negative results. It is well known that these substances contain no indican.

The author, then, taking advantage of Landolt's test (shaking the suspected liquid with an excess of bromine water, and allowing it to stand, when a precipitate containing the phenol collects), traced the

phenol in poisoned dogs. These animals were fastened on their back, and their bellies painted with a strong solution of carbolic acid, care being taken that the breast, throat and head should not be touched. After a few minutes the appearance of characteristic tremblings and spasms marked the commencement of the poisoning. The temperature in the rectum was not altered even when the animal could no longer stand on his feet; but at last it sank. The heart and respiratory movements were greatly affected by the continuous muscular spasms, and the respiration became feeble and irregular.

The arterial pressure experienced at first, when the spasms began, a marked increase, afterwards it fell, and for a long time steadily remained below normal; thus 115 mm., 151 mm., 99 mm., represent the three noted stages. The blood pressure in the jugulars, Hoppe-Seyler believes, though he did not experimentally determine, to be increased steadily. No chemical alteration was perceptible in the blood; its coagulability and the form and color of the red disks were not perceptibly altered.

The muscles preserved their excitability even after death. The death was a slow one, with gradual failure of respiration and circulation, and also gradual fall of temperature. Artificial respiration seemed to prolong life.

Chemical examination after death, in two experiments, yielded the results expressed in the following table:—

	Experiment 1.	Experiment 2.
	Per cent. of carbolic acid.	Per cent. of carbolic acid.
Blood	0.00128	0.00364
Brain	0.00325	0.00346
Liver		0.00125
Kidneys		0.00423

Two cases of human poisoning from external use have come under the notice of our author.

Two men, for the relief of scabies, very freely rubbed one another simultaneously with a very strong solution of carbolic acid. Suddenly one of the men exclaimed, "I am drunk," and the other cried out on account of the local pain. Their mother, being alarmed by the cries, ran to her sons, whom she found holding fast to some furniture, totally unconscious: one of them she held in her arms, whilst the bystanders freely rubbed him with water on the head and breast; he did not speak and in a very short time died. The other man was laid on the bed, coffee administered, and shortly afterwards he regained consciousness. He stated

the first sensation, after the application, was a feeling of tension in the head, then came giddiness, and then he lost all consciousness.

At the post-mortem, in both ventricles dark watery blood was found, and the muscular rigidity was very marked.

In *Pflüger's Archives* for May, P. C. Plugge has an elaborate article on the value of carbolic acid as an anæsthetic, which, although a valuable exponent of the present state of our knowledge, contains very little new matter.

UPON THE PHYSIOLOGICAL ACTION OF TRICHLORHYDRIDE.

BY A. ROMINSKY.

By the experiments of the last decade it has been shown that many innocent hydrocarbons become changed by the entrance into them of an atom of chlorine into powerfully anæsthetic bodies. The following examples prove this:—

		Boiling Point.	
CH_4	Marsh gas	Gas.	Without effect.*
CH_3Cl	Chloride of methylene	Gas.	Slightly anæsthetic.
CH_2Cl_2	Bichloride of methylene	30.5°C	Anæsthetic.
$CH\,Cl_3$	Chloroform	62°	"
$C\,Cl_4$	Liquid protochloride of carbon	78°	"
C_2H_6	Hydruret of ethyl	Gas	Not studied.
C_2H_5Cl	Muriatic ether	11°	Anæsthetic.
$C_2H_4Cl_2$	Æthyl bichloride (Liq. Holland.)	64°	"
$C_2H_3Cl_3$	Æthyliden chloride	75°	Not studied.
$C_2H_2Cl_4$	Acetyl chloride	102°	"
C_2HCl_5	Æther anæstheticus arani	140°	Anæsthetic.
C_2Cl_6	Solid chloride of carbon	182°	Not studied.
C_2H_4O	Aldehyde	21°	Slightly anæsthetic.
$C_2HCl_3O+H_2O$	Chloral hydrate	—	Anæsthetic.

The great difference between the chloral hydrate and the remaining anæsthetics is not really so great as it appears, but is owing to its being the only one soluble in water. The continuance of its action, like that of alcohol, is owing to its physical qualities, which allow it to remain for a long time in the system. The intensity of its action apparently depends upon the large amount of chlorine it contains, for the anæsthetic properties appear to be somewhat proportional to the amount of that element present.

Dr. Rominsky was determined by these facts to undertake the investigation of some still unstudied chlorine derivatives of the fatty group. The first of these which he has studied is trichlorhydride, a glycerine

* References to the original authorities are given by Dr. Rominsky.

which has become converted into a trichloride of propylhydride ($C_3H_5Cl_3$) by the substitution of three atoms of chlorine.

The first experiments were with frogs. A drop of the substance in the mouth caused in 15 minutes great weakness of voluntary and reflex movements. The animal lay motionless on his back, and after a short time the most powerful irritations failed to develop any reflex actions. The heart's beats were 12 per minute. This condition lasted 4 hours, then gradually went off.

Eleven experiments were made with rabbits. In rabbits of middle size 0.5 grm. in very large ones, 1 grm. given by the mouth, caused sleep in 5 minutes, with great lessening of reflex excitability, which in 3 cases was totally abolished. The breathing remained regular and deep; in the worst cases it was slowed from 90 to 48 per minute. The heart's beat was rendered more rapid, from 240 to 360 per minute. The sleep continued from 10 minutes to many hours, and was followed by perfect recovery. There was always marked enlargement of the vessels of the ear directly after the administration of the drug, followed by decided contraction. The rectal temperature sank in all the experiments 3° C.

In the only experiment in which the blood pressure was studied there was a marked rise, followed, after some vibrations, by a sinking of the mercury. During the two hours of sleep there was a regular vibration of the pressure (the period was about one minute, the amount of vibration 40 mm. Hg.).

Dr. Rominsky has tried the drug on man also. On four neuralgic patients the doses of 0.5—1 grm. produced comparative ease, and in one case sleep for 10 minutes. Larger doses caused vomiting. The pulse frequently fell 8—12 beats, the temperature from 0.90—0.30°. In all cases there was vomiting, beginning 4 to 7 hours after the administration. The Doctor himself took 2 grammes in capsule; after 15 minutes there was great sleepiness, headache, and feeling of heat in the face, which continued two hours. Seven hours afterwards severe vomiting came on, lasting two days, and followed by a catarrhal gastritis.

Dr. Rominsky has tried also dichlorhydride, which physiologically resembles trichlorhydride, but is still more irritant to the stomach.

Trichlorbenzol and chloramyl he has found to be without action.—*Pflüger's Archives*, May, 1872.

FEEDING BY THE RECTUM.

The feeding of patients by nutritive enemata in cases of stricture of the œsophagus or pylorus, or whenever the upper part of the digestive

tube must be relieved of its functions, has hitherto been anything but a satisfactory procedure. The ordinary fluid food which is generally used for that purpose is either not retained long enough in the rectum, or cannot be digested there for want of a digestive ferment. Even the proposal of Meissner, to use an artificially prepared meat-peptone, has not always been found practicable, and the long time necessary for its preparation makes it quite unsuitable for daily practice. A decided step in advance has recently been made by Dr. W. O. Leube, of Erlangen (*Deutsches Archiv für Klin. Medic.*, vol. x.). Starting from the idea that it would be best to let the digestive changes which must necessarily precede absorption go on in the rectum itself, with its equable temperature, he devised a mixture of food and digestive ferment which, he found, is easily retained in the rectum from twelve to thirty-six hours. The digestive ferment is the fresh pancreas of the ox or pig, which, finely minced, he mixed with scraped meat, rubbing them well together with a little warm water, so that the mass may be easily injected. The most suitable proportion is one part of pancreas to three of meat. Fat may be added, but its quantity ought not to exceed one-sixth of that of the meat. Before this food is injected, the rectum ought to be washed out with water. Dr. Leube mentions that the first enemata sometimes apparently remain undigested, but that this must not prevent their being continued. Generally the fæces resulting when this food has been retained sufficiently long have the character of ordinary fæcal matter. By a series of experiments, Dr. Leube has proved that by this method of feeding *per rectum* a considerable quantity of nitrogen is taken up into the system. In a dog, which for several days had been deprived of nitrogenous food, and whose system, therefore, was in a state of nitrogen-hunger, an increase in the nitrogen elimination by the kidneys took place when these nutritive enemata were given; and, on the other hand, in several experiments on a dog, and likewise on a healthy young man whose system was in a state of satiation with regard to nitrogen, the quantity of nitrogen excreted through the kidneys was not materially diminished when most of the nitrogenous food was introduced by the rectum instead of the stomach. A chemical examination of the fæces remaining when the food had been retained long enough showed that almost the entire quantity of nitrogen contained in the food had disappeared. The same was found with regard to fat; and in a dog that was killed on the second day of the experiment, the epithelial cells of the mucous membrane of the colon were found filled with fat globules. Dr. Leube also relates three cases of patients in whom this method of feeding had been used, and has completely answered the expectations which had been formed from his experiments. Of particular interest is the last case, in which, in con-

sequence of tincture of iodine having been accidentally swallowed, no food whatever could be taken by the stomach, and the feeding by the rectum had to be continued for more than four weeks. In all three cases the general condition of the patients was much improved, although the nature of the cases precluded any but temporary benefit, two of the patients suffering from carcinoma.—*Brit. Med. Journ.*, July 6, 1872.

Since the publication of the above paper by Dr. Leube the *Centralblatt für Med. Wissen'ft* of July 20th contains another article from him on the same subject, in which he says, that in the warmth of summer the pancreas begins very soon to undergo decomposition, and in consequence loses its digestive power and becomes irritating to the intestine, producing rapid expulsion of the material injected. These mishaps may easily be avoided by making a glycerine extract of the pancreas. This extract is quite equal in digestive power to the fresh pancreas, and will remain good for several weeks. The following is the manner of preparing this extract in glycerine. The pancreas of a bullock (which is sufficient for three enemata) is finely chopped and rubbed with 250 *grammes* of glycerine; and to each third of this, when about to be used, are added from 120 to 150 *grammes* of finely divided meat. It is important that this mass should be injected into the intestine as soon as it is made; for if it is allowed to stand, the meat swells and the operation is thereby rendered difficult.—*Med. Rec.*, New York.

TREATMENT OF PSORIASIS WITH ACETIC ACID.

BY DR. BUCK.

The exact method of making this application is as follows: First, the superficial scales are to be removed by the aid of frictions with soft soap and warm water, after which different portions of the diseased skin are to be attacked by the acetic acid, which is to be painted on by means of a small camel's-hair brush. The extent of skin which can be daily treated in this manner will depend very much upon the susceptibility of the patient to the action of the remedy, his ability and willingness to endure the consequent smarting, which would appear to be by no means inconsiderable. As the patient becomes more tolerant of this caustic, the applications may be made more frequently, and a larger area may be painted at one sitting. As the result of the application of this agent the tissue becomes white and puffs out, while the surrounding skin becomes red and inflamed, all of which is attended by a moderately severe smarting, which usually subsides in the course of fifteen minutes. The layers of epidermis, which at first are rendered softer, soon dry up and assume the character of thin, horny scales, which in a few days either fall off

of themselves or are readily detached, after which the application of the acid is to be renewed. If the smarting continue for any length of time, or if a severe irritation of the surrounding tissue be produced, as indicated by extensive swelling and redness, the treatment is to be suspended for the time being, and some soothing application, such as lead wash, is to be made to the irritated tissue. The acid may be applied in this manner from one to three times daily, as the patient may wish, until the red, indurated, and thickened tissue is entirely removed, and its space supplied by a smooth soft skin of the natural color. No eschar remains upon the affected spot. In cases of long standing a dark-colored pigment may somewhat discolor the skin for a time, but even this disappears after a while, which, in cases where the psoriasis has had its seat upon the face, is a matter of no little importance to the sufferer. Upon the healthy tissue the acetic acid exerts little or no effect, acting merely as a rubefacient. The time required for the accomplishment of a thorough cure varies from four to eight weeks, depending upon the degree of vigor and persistency with which the treatment is applied, and also upon whether the eruption is of long or short duration.

Regarding psoriasis as a strictly local affection, Dr. Buck has invariably discarded the use of any internal remedies, such as arsenic, carbolic acid, etc., and the results of his external treatment above described seemed to have been attended with uniform success. One case is reported of a young lady, aged thirty, whose body was almost entirely covered with diseased patches (*psoriasis universalis*), varying in size from a split pea to the palm of the hand, whose cure was effected inside of eight weeks. In *psoriasis syphilitica*, which is not strictly included under the same head, the ordinary anti-syphilitic remedies are of course indicated. The acetic-acid treatment appears to have been pretty thoroughly tested for a number of years by Dr. Buck in his hospital wards, and he confidently recommends it to general practitioners, maintaining that it can be carried out *tuto*, if not both *cito et jucunde*. To those whose appetites have often succumbed in vain to nauseating doses of arsenic, so empirically prescribed by the English school of dermatologists, the announcement of this new and simple method of cure will be particularly gratifying.—*Berlin Med. Wochenschrift; Boston Med. and Surg. Journal.*

MURIATE OF AMMONIA IN CHRONIC LIVER DISEASES.

Dr. W. Stewart reasserts, in the *Indian Med. Gaz.* of August 1, the great value of muriate of ammonia in chronic torpor of the liver, chronic

hepatitis, and even hepatic abscess. After a few doses the patient often feels a very sudden and sometimes severe pain in the right hypochondrium, often a feeling of shock; this does not recur, but there is very constantly a drawing sensation in the region of the liver. The skin rapidly clears up under the influence of the drug, appetite and sleep return, hectic fever, if present, vanishes, and the gloomy despondency of the patient gives place to hopefulness. The medicine often produces very free perspiration, and apparently also diuresis. To induce this favorable change, however, the muriate must be steadily given for from six to ten days, as its action does not sooner become apparent. The dose is twenty grains twice or thrice daily. When there is a chronic enlargement of the viscus, the administration should be persevered in for weeks and even months, and the liver will, in nearly all cases, gradually shrink away to its normal size. Dr. Stewart states that he advances these facts as the result of a very large experience in India.

TREATMENT OF INTESTINAL WORMS.

Dr. Wm. Dale (*Boston Medical and Surgical Journal*):

1. For tænia (tapeworms) he gives preference to the male shieldfern (*Aspidium filix-mas*). Turpentine, though pretty efficient if given in an effectual dose, is apt to produce strangury. Kousso is difficult to obtain in an unadulterated form, and is uncertain in its action. Kameela is objectionable on account of the severe griping pains it induces. To prepare the patient for a dose of shieldfern, no food should be taken after breakfast, except mutton-broth or tea. In the evening a dose of castor oil, or of compound senna mixture, is administered with the object of evacuating completely the contents of the intestine, so that the worm may be exposed to the full action of the vermifuge. Upon the following morning the malefern is to be taken, in the dose of one drachm and a half of the liquid extract rubbed up with half an ounce of mucilage; this mixture is then added to about two ounces of milk, which is the favorite food of the worm, and therefore the best vehicle for the administration of the medicine. The patient should lie quiet for two and three hours after taking the dose, otherwise it is apt to cause nausea and faintness. At the end of that time another aperient dose may be required, since the malefern itself does not always purge. Nothing in the form of food is to be allowed until the bowels have been evacuated, with the exception, perhaps, of a little broth or tea, or brandy and water in case of faintness. This whole process should be repeated at the expiration of a week, though, as a rule, the entire worm is killed and expelled by the first dose. In rare cases three separate doses are necessary. The head is seldom found, owing, perhaps, to

its small size, and possibly to the change it undergoes from maceration in the intestinal juices, so that the discovery of some of the smaller joints may be regarded as tolerably satisfactory evidence of the destruction of the worm.

2. For the round worm (*Ascaris lumbricoides*) *santonine* is recommended as a specific, and repeated small doses are advised, instead of a single full dose, since the latter is apt to produce some disagreeable symptoms, such as irregular pulse, singing in the ears, vertigo and nausea. A partial suppression of urine may follow the administration of even a small dose, but this is only temporary. The proper dose for a child five years old is three or four grains every night at bedtime, which is to be taken with the following restrictions: A light meal of mutton-broth, with very little bread, may be allowed, but no food should be taken after this. The santonine must be taken in dry sugar or honey, and is more efficacious when no liquid is swallowed immediately after. As in the case of tapeworms, the vermifuge should be preceded by a brisk cathartic, such, for instance, as the mistura sennæ comp., which acts so efficiently upon the small intestine. The powder (*santonine*) should be taken every night for a fortnight, and as it is not itself aperient, it may be necessary occasionally to administer a cathartic.

3. The short thread-worm (*Oxyuris vermicularis*) inhabits the lower portion of the intestine, and can generally be removed by enemata. Of these, a solution of common salt in an infusion of quassia (in the proportion of two ounces to a pint) is suggested as simple and efficacious. If this treatment fails in entirely dislodging them, they are probably resident higher up in the colon. It is then advisable to continue the injections, and at the same time administer by the mouth small doses of aloes in combination with iron and quinine. For children, wine of aloes with syrup of ginger may be ordered. If this treatment be continued for a fortnight or three weeks, the patient will rarely be further troubled with the annoyance.

COLD-WATER TREATMENT OF TYPHOID FEVER AND RHEUMATISM.

Dr. Edes gives the following summary (Boston *Medical and Surgical Journal*):—

Schols, in Bremen, has lost, since 1869, 5 cases in 125, that is, 4 per cent. Baths were given when the temperature rose above 39° C. (102.2° Fahr.). In severe cases, cold applications were made to the chest and abdomen. The chief contraindication to this treatment is intestinal hemorrhage. It is also but little applicable to those rare

cases, mostly among habitual drunkards, where the disease, though presenting severe symptoms, is not characterized by a high temperature.

Bauer, in Munich, concludes that the mortality in general is diminished by the cold-water treatment; that the mortality is increased by a disregard of the disease in its early stages, the want of regular, early anti-febrile treatment, and by insufficient nourishment. Baths were given at 39.6° C. (in rectum), and ice-bags applied. The baths were usually at 16° C. or 18° C., or if the patient was very weak a longer one, at a higher temperature, was used.

Lissauer, in three army hospitals, observed a mortality from typhoid of 11 in 46, under an expectant treatment, and of 6 in 97, under the use of cold water. He considered that great advantage was derived from a combination of the cold-water treatment with the use of quinine, according to Binz' plan, given 1 grm. (15 grains) at night. In this way the remission of the fever was prolonged, so that it was possible to get along with two, or at the most three, baths per diem.

Götz reports from the Vienna General Hospital that the mortality from typhoid under the expectant treatment was 28.72, under cold-water treatment, 15.4. In typhus maculata, on the other hand, the corresponding figures were 17.97 and 26.16.

Brand criticises a report from Duchek's clinic, in Vienna, which was unfavorable to the cold-water treatment, because the baths were not continued through the night, as they should have been. He says that it is not sufficient to bathe when the temperature reaches 39° C., but that the baths should be given often, and long enough to keep the temperature between 37° and 38°(98.6° and 100.4° Fahr.), or within a few tenths of a degree of this limit. He thinks that the fever may thus be completely kept under, and, if the treatment is begun early enough, the mortality reduced to zero.

Riegel applied the cold-water treatment in the Julius Hospital, at Würzburg, in a mild (?) form. The bath was warmed to 68° Fahr., and the patient allowed to remain therein ten minutes. Half baths were used, and colder water poured on from above. Baths were given when the temperature reached 103.1°, and in the intervals cold compresses were applied to the abdomen. In the years 1870 and 1871, of 156 patients with typhoid, only the severer cases being reckoned, only 7 died (4.48 p. c.). Before the introduction of the cold-water treatment into the same hospital the usual percentage of mortality was 20 per cent. Riegel, like Jürgenson and Hagenbach, observed very frequently a severe burning pain in the soles of the feet, so that there seems to exist some connection between this symptom and the cold-water treatment. Intestinal hemorrhage seemed no more frequent

than under an expectant treatment, perhaps from the mild character of the hydro-therapeutics.

Dr. Kelly reports two cases of hyperpyrexia in rheumatism, in one of which, a man, the temperature gradually rose until death, while in the other, in which the temperature rose even higher, the cold pack was applied, by sheets continually wrung out of cold water, reducing the temperature in four and a half hours from 106.2° to 99.6°. Brandy was frequently given throughout the treatment. From this date the patient began to mend.

ACTION OF QUININE ON THE COLORLESS BLOOD-CORPUSCLES.

In *The Practitioner*, Dr. Geltowsky details some experiments on this subject, and concludes :—

From these experiments it follows :—

a. That quinine arrests the movements of the colorless globules of the newt's blood, if it be used in the proportion of one part to 800 or 900 parts.

b. That the globules of the female's blood resist longer the action of quinine.

c. That the globules of the blood of animals enfeebled by the loss of blood in previous experiments resist the action of quinine a shorter time than the globules of animals entirely fresh.

d. That the solution of quinine, whether it be in water or in serum, acts with the same force. As regards the solution of quinine in serum, it is remarkable that the movement of the colorless globules ceases in a much shorter time if the serum is not perfectly fresh, although the reaction be neither more nor less alkaline than that of normal serum. I found, for instance, that in a preparation which contained two drops rabbit's serum, kept for twenty-four hours after the animal died, and three drops of newt's blood, after half an hour the movement of the colorless globules had entirely ceased.

On injecting into the blood doses which cause the death of animals, quinine has no influence on the colorless blood-corpuscles. Even if the quinine had had the same influence on the colorless corpuscles of the blood in the interior of the organism as under the microscope, it would have been impossible to explain, by the action of quinine on the colorless corpuscles, the cure of certain maladies under treatment by this drug, because, according to the preceding experiments, it is necessary to employ one part of quinine to 2,800 parts of the blood of man. Hence, in the case of a man in whom the quantity of blood would

amount to about 15 to 20 pounds, it would be necessary, in order to obtain the special effect, to take almost one drachm of quinine, which would be impossible.

I am therefore not able to affirm that quinine has an influence on the quantity of colorless blood-corpuscles in the organism; and I wish only to say that in leukæmia, under treatment by that drug, the decrease of these blood-corpuscles must be explained in some other way, and not by simple direct action of quinine on colorless blood-corpuscles; for instance, by direct action on the nervous system and indirect action on the glands, or other organs whose function it may be to give rise to or to destroy the colorless blood-corpuscles. But that would be a pure supposition, and not a result proved by experiment.

MIXED ANÆSTHESIA IN OBSTETRICS.

The effect produced by the new combination of morphia and chloroform, just now so extensively employed in France, is called by Claude Bernard a condition of *mixed anæsthesia*. In a note from Guibert presented by Claude Bernard to the Paris Academy (*Gaz. des Hôpitaux*, June 25, 1872), the method of its employment in obstetrics is reported as follows:—

It is in cases of difficult labor that this analgesia may be induced with the happiest effects. It diminishes the pain in marked degree, and may be continued for several hours without incurring the least danger to the mother, without injuring the condition of the infant, without modifying uterine contractions to any extent, and without increasing the subsequent danger of hemorrhage.

I am in the habit of employing this method as follows: I make a subcutaneous injection into the forearm of about one ctgr. of chlorhydrate of morphia at the moment when the pains begin to be severe, or when agitation with anxiety and discouragement supervenes. A quarter of an hour after the injection I commence the inhalation of chloroform, by the ordinary method, at the beginning of a uterine contraction. So soon as a dozen inspirations have been made, the patient experiences, instead of an augmentation, an alleviation of the pain, while the contractions continue in force. I suspend the inhalations so soon as the pains are over, and again administer them on their recurrence. In this way I continue throughout the whole labor, administering chloroform only during contractions.

The state of agitation and anxiety is succeeded thus by a condition of calm and comfort, in a contrast which is heightened by expressions of the liveliest gratitude on the part of the patient. When the head

has reached the perineum, and the moment of agony has arrived, there need be no fear nor hesitation to again inject, this time with one-half ctgr. morphia, which is sufficient now to render supportable —at times, indeed, to absolutely nullify—the atrocious pains of passage. The analgesia thus induced, moreover, diminishes in marked degree the extreme fatigue incident to severe labor.

I have notes of a case of pelvic version in a trunk-presentation, practised more than sixteen hours after the escape of the waters, executed with the greatest facility under this condition of analgesia, the mother being so far conscious all the time as to be able to answer all questions addressed to her, uttering neither cry nor complaint.

The combined action of chloroform and morphia completely dissipates that tetanic contraction which renders version in these conditions so difficult and painful.

This condition of analgesia without anæsthesia may be easily maintained if the precaution be adopted to frequently interrupt the inhalations of chloroform.

In a case of mixed anæsthesia, induced for an amputation of the breast, I observed a considerable reduction of the pulse. It fell gradually from 100 to 54 in the minute. There was not the least danger throughout. Half an hour after the operation, the pulse slowly increased to 80 per minute.—*Philadelphia Med. Times.*

COLD IN PYREXIA.

The following is an abstract of the more important parts of a discussion on the use of cold in pyrexia, which took place at the London Clinical Society, reported in *Medical Times and Gazette* of October 19:—

Dr. Southey related a "Case of Acute Rheumatism, with Cerebral Symptoms and High Temperature, treated unsuccessfully by Cold Affusion," in a well-built man, aged 35, of highly nervous temperament, in the habit of drinking wine and beer, but not intemperate. This was his first attack of acute rheumatism. The rheumatic articular inflammations were not established until after he had been ailing for fourteen days, with a temperature ranging between 100° and 102.5°. The rheumatic symptoms were well marked. The invasion of several joints with swelling and redness, the tongue, the pulse, and the sweating were highly characteristic. On the eighteenth day of illness pericarditis set in, the joint-inflammation suddenly subsided, and delirium of a peculiar kind, preceded by head-pain and obscurity of vision, presented itself; the temperature now ranged between 104° and 105° in the axilla for ten days, while twelve grains of quinine,

from six to ten ounces of brandy per diem, and various opiates, as well as chloral, were administered with little sedative effect. Bronchial symptoms now ensued, with great failure of power, although food and stimulants were freely taken. Delirium, akin to coma vigil, still continuing, and his temperature marking 105°, the patient was immersed in a bath quickly cooled down from 96° to 71°. The effect was immediate dissipation of delirium, with reduction of temperature to 100.5°, followed by short repose; but, the bodily temperature quickly rising again, he was maintained wrapped in a wet sheet exposed to the air of the room at 65° for an hour. After this his temperature fell, and remained between 101° and 102° for two days. Some rest was now obtained, the pulmonary symptoms relieved, and respirations fell from 36 to 28 per minute. Subsequently, the wet sheet was frequently employed, on four occasions as often as three times in the twenty-four hours, with invariable relief of the delirium and subsultus. From the eighteenth day of his illness up to the fortieth, quinine was given in doses varying from twelve to twenty-four grains in the twenty-four hours, as well as brandy, from four to ten ounces, without noticeable good or ill effect. On the thirty-third day of his illness his temperature fell spontaneously to 100.5°; he was then quite rational for twelve hours, and there was a slight return of the rheumatic pains in the joints, which lasted, however, only for a few hours. The patient gradually sank with low broncho-pneumonic symptoms on the forty-second day of his illness. The post-mortem examination revealed that swollen condition of the glandular viscera ordinarily discovered after all acute febrile diseases, but no tubercle anywhere in the body, and no apparent mischief in the brain or its membranes. The author of the communication considered the case one of cerebral rheumatism, and thought that the cold-water treatment had prolonged life and relieved the delirium.

The President, who had seen the patient, thought the bronchitis was produced by the cold water.

Dr. Southey had known the patient for years, and never saw him intoxicated. He made careful inquiry, and found that very little alcohol upset him, so that he could not take it.

Dr. Wilson Fox thought the relation of temperature to delirium exceedingly interesting. This was almost the first case of cerebral rheumatism which had proved fatal with the cold-water treatment. The temperature of the patient was comparatively low for cold affusion. He considered that they had better not adopt any active treatment in these cases until they should see whether nature was to prevail and the temperature fall of its own accord. We often see cerebral symptoms come and go with low temperature; and, on the other hand,

we often have high temperature and no delirium. He thought it better, in such cases, to wait until there was a high temperature—say 107° —before applying the cold water. Cerebral symptoms did not of themselves threaten a fatal issue; no more did a temperature of 105°. He would wait till a temperature of 106° was passed, or even 107°. There were no deaths recorded under 109°, and a temperature of 106.5° had been recovered from naturally. Bronchial complications did arise after cold water, but they might arise from the high temperature itself. He had felt some little doubt of the propriety of using cold water in typhoid till after the study of the records, which showed that bronchial complications occurred as frequently without it.

Dr. C. T. Williams said, with regard to the bronchitis, he had been using the cold baths to keep down temperature in cases of phthisis, and though such subjects were prone to bronchitis, no evil result followed.

Dr. Southey said the cold sheet always removed the delirium.

Dr. Powell asked what was the effect of cold on the joint—did it check the inflammation?

Dr. Weber said he had seen the joints get better before the head was affected, and the joints get worse as the head got better.

The President mentioned a case where the temperature suddenly rose to 107.5°. They put the patient in a bath at 90°, and cooled it down to 47°. The patient was in it for two hours, and the temperature was very greatly reduced. The pain in the joints was relieved. At night the patient was put in the bath again for a shorter time, and was cooled down to 80°. The joints did not get bad again. It was a question how far this rise of temperature was due to mechanical injury to the brain.

Dr. Greenhow also read elaborate notes of an interesting case of acute rheumatism with high temperature unsuccessfully treated by cold water.

Dr. Wilson Fox said we had yet a good deal to learn with regard to the use of cold in such cases. There seemed to be two kinds of them. In one the reduction of temperature followed immediately on the bath, and was permanent; in other cases there was a long-continued attack of fever, requiring long-continued bathing. In these he would only use cold as a means of treating hyperpyrexia, leaving the disease to run out, or act on it by other remedies. If the high temperature returned, it might be well to wait to see if it would fall of its own accord

IODIDE OF POTASSIUM FOR HYDATIDS.

The Medical Times and Gazette, of Oct. 19, says editorially:—

The galvanic cautery may be more used and more useful; but, as an act of simple justice to the memory of the late Dr. Tanner, we wish to put on record the fact that, in addition to the cases recorded by him, four cases (three of them verified by post-mortems and elucidated by the microscope) are known to us in which the daily use of iodide of potassium in full doses for a few weeks (in none exceeding two months) was followed by the gratifying result of the gradual wasting and complete cure of the hydatid cyst—the one patient remaining well after several years, the others dying, after some months, of totally different diseases, and the result becoming patent at the autopsy. Two such cases occurred in the practice of the late Dr. Heckford, but were known to, and verified by, the writer of this article. These may be pure coincidences of a natural cure and the exhibition of the drug; but the multiplication of such coincidences seems to us to render the use of so innocuous a method, or of some similar plan, imperative in all cases where more heroic means are inapplicable.

Carbolic Acid in Pruritus.—In prurigo and pruritus, says Dr. Pintschovius, in the *Allgemeine Medicinische Central Zeitung*, I have successfully tried carbolic acid externally. I prescribe a solution containing 2½ per cent. of carbolic acid, and of this direct a tablespoonful to be mixed with a teacupful of rain-water. Every morning and evening the diseased skin is thoroughly sponged with this. I treated 30 patients in this way, and every one has recovered in from three to eight days' time.—*Medical and Surgical Reporter.*

ON CHLORAL IN PERTUSSIS, AND A POULTICE OF DIGITALIS IN SUPPRESSION OF URINE AND IN PUERPERAL CONVULSIONS.

BY G. R. HENRY, M.D.

I have used the hydrate of chloral now for two years, and have not met or heard of a case of whooping-cough that was not promptly *cured*. I have suggested its use to a number of practitioners, who all report a perfect success. It will control the spasmodic cough, if given in the latter stages; and, if given early, it will prevent the whoop from appearing. I use it dissolved in sirup of tolu, in doses of two to ten grains, according to age of child, and repeated as often as the cough occurs: and I have yet to see a case that required more than

ten days' treatment. Contrast this with the weeks and months of suffering and distress which we have seen wear out our little patients.

Another remedy, which has not the position given to it to which it is entitled, is a digitalis poultice, applied to the abdomen in cases of *urinal suppression.*

I have used it with marked success in cases of puerperal convulsions, and in other cases where the stomach would not tolerate remedies by the mouth.—*Medical News.*

Chlorate of Potash to prevent Salivation.—Dr. Dodge says:—It has been my practice for the last three years to administer the chlorate of potassa in connection with a mercurial, whenever I desired to give the latter for any length of time. I do not administer the chlorate at the same time that I do the mercurial, but at longer intervals, and nicety of dose is immaterial; a small quantity is sufficient. I cannot see but that I obtain the therapeutical effects of the mercurial as readily as before I gave the chlorate. In secondary and tertiary syphilis I have employed the same agents with similar results.

But still more in active inflammation, when I have given repeated doses of calomel at short intervals, with an occasional dose of the chlorate, I have obtained the desired effect of the calomel, but never produced the slightest symptoms of ptyalism.—*Transactions of the Minnesota State Med. Society*, 1872.

Olut Kumbool.—Bhoobun Mohun Sircar commends most highly a medicine with the above name as a remedy for neuralgic and congestive dysmenorrhœa, which he says it relieves wonderfully. It is to be given during the menstrual period, and not only cures the pain for the time being, but permanently. The author says he has used it in 500 cases.—*Indian Med. Gazette*, July 1, 1872.

ACTION OF ALCOHOL.

Dr. Lionel S. Beale sums up, in the *Medical Times and Gazette*, as follows:—

"1. In external wounds, and in internal diseases where alcohol acts beneficially, the good result is, in part at least, due to the alcohol checking the *increased action* already established.

"2. Alcohol does not act as a food; it does not nourish tissues. It may diminish waste by altering the consistence and chemical properties of fluids and solids. It cuts short the life of rapidly-growing bioplasm, or causes it to live more slowly, and thus tends to cause a diseased texture, in which vital changes are abnormally active, to return *to its normal and much less active condition.*

"3. In 'exhausting' diseases alcohol seems to act partly by diminishing very rapidly the abnormally-increased growth of bioplasm. The quantity required will depend upon the extent to which the changes alluded to have proceeded. In extreme cases half an ounce of brandy, or even more, may be given for a time (in some cases even for several days) every half hour; and there is reason to believe that in desperate cases life is sometimes saved by this treatment.

"*Practical conclusions.* Lastly, I shall venture to repeat here the conclusions I arrived at many years ago concerning the great value of the alcoholic treatment of low fevers and inflammations. Increased experience has afforded further confirmation of the correctness of the statements made in the paragraphs below. I do not, of course, refer to slight cases of fever, pneumonia, etc., in which no stimulant whatever may be required, but to *very severe cases of disease* only.

"1. In what appeared hopeless cases, as much brandy as the patient could be made to swallow (an ounce and a half to two ounces in an hour) has been given for several hours in succession, and then as much as thirty ounces a day for several days, not only without producing the slightest intoxication, vomiting, or headache, but the treatment has been followed by recovery.

"2. I would adduce the fact that a man not accustomed to drink, when suffering from acute rheumatism, complicated with pericarditis with effusion, pneumonia at the base of one lung, and pleurisy on the opposite side, has taken twenty-four ounces of brandy a day for eleven days, the tongue being moist and the mind calm during the whole time. While under this treatment inflammatory products were absorbed, and the general state of the patient much improved.

"3. I have been compelled to give a very weak child, weighing less than four stone, twelve ounces of brandy a day for ten days, while suffering from acute rheumatism, with pericarditis and effusion. This quantity did not produce the slightest tendency to intoxication, or exert other than a favorable effect upon the disease. The patient did not begin to improve until the quantity of brandy, gradually increased, had reached the amount stated.

"4. I would state that among the general conclusions I have reached after carefully watching more than one hundred cases of acute disease treated with large quantities of stimulants, are the following: that intoxication is not produced; that delirium, if it has occurred, ceases, or is prevented from occurring at all in the course of the case; that headache is not occasioned; that the action of the skin, kidneys, and bowels goes on freely; that the tongue remains moist, or, if dry and brown, often becomes moist; that the pulse falls in frequency and increases in force; that respiration is not impeded, but that, where even

one entire lung is hepatized, the distress of breathing is not increased, and it appears that the respiratory changes go on under the disadvantageous circumstances present as well as if no alcohol had been given.

"The conclusion from all this is, most certainly, that alcohol does not do harm in fevers and acute inflammations; that it does not produce intoxication in the persons suffering from exhausting diseases; and that large quantities (from twelve to thirty ounces) may be given in cases which appear very unlikely to recover, and sometimes the patient will be saved. The conviction is forced upon the observer that in desperate cases these large quantities of alcohol are directly instrumental in saving life, not by *exciting or stimulating to increased action, but by moderating actions already excessive*, and at the same time by causing the heart to contract more vigorously, and so continue to drive the blood through the impeded capillaries."—*Med. Times and Gazette.*

Ingrowing Toe-nail.—By Dr. G. Stillwell.—Forty years since, when I was an assistant, a young farmer one day came to the surgery, and was operated upon for an ingrowing toe-nail. This was done by tearing the nail away. The poor fellow suffered so severely that I was induced to say, "I will never perform that operation." Of course, in many years' active practice, I have had many such cases under my care; and my invariable mode of proceeding has been to find the edge of the nail with a probe, and then remove the whole of the granulations and hypertrophied cellular tissue on both sides, if requisite. In no case have I been disappointed, or ever had to treat the patient for a return of this grievous complaint. I fully expected that this mode of treatment was general; but my attention has been recently drawn to the case of a fine young man rendered almost a cripple, by having had both his great toe-nails torn out, leaving the overlapping skin to such an extent as to prevent healing, with the probability of return on the growing of a new nail.—*British Medical.*

Traumatic Tetanus successfully Treated by the Bromide of Potassium.—By Cephas L. Bard, M.D.—F. S., æt. fifteen, during the latter part of April, 1872, stepped upon a bone, the vertebra of a hog, and although the wound produced was deep and bled profusely, yet it healed rapidly and caused but little inconvenience. Five or six days subsequently she complained of pain in her temples, and of stiffness of her jaws. I found all the pathognomonic symptoms of traumatic tetanus present: a rigid contracted condition of the body, which was bathed with a profuse sour perspiration; opisthotonos; spasms at short intervals; aged expression of countenance, with the

risus sardonicus well marked; temperature of body 105°; terrible pain in the epigastrium, due to spasm of diaphragm; pulse normal and mind clear. Retention of urine and constipation of the bowels were also among the symptoms present. There was no pain whatever at the site of the wound, which, to all appearances, had kindly healed. Having laid open the wound, situated in the inner plantar region of the foot, I discovered and removed a small spicule of bone. The use of stimulants and nourishing articles of diet were ordered; the warm bath; poultices to the wound; and the bromide of potassium, commencing with thirty grains, given every hour, till four doses had been taken, when both the quantity and frequency of administration were lessened. A decided amelioration of the patient's condition almost immediately occurred, and she slowly but gradually recovered, although the trismus, which was the last symptom to vanish, existed for three weeks later. During this time she continued to use the bromide, the whole quantity taken amounting to three ounces. No bad effects whatever, from its protracted use, were noticed.

Epilepsy Treated by Bromide of Potassium.—In a recent number of the *Gazette des Hôpitaux*, Dr. Du Saulle has published the results of the administration of bromide of potassium in two hundred and seven cases of epilepsy. Headache, gastric disturbance, disturbance of sensation, and other troublesome symptoms have been described as following the use of the remedy; but these he has not found to occur when the drug has been pure. When the quantity taken daily reaches 4 *grammes*, the reflex sensibility of the fauces, epiglottis, and root of the tongue, and the sensibility of the generative organs, are diminished. Acne then also appears; which is not, however, as has been represented, of critical importance. Dr. Legrand du Saulle commences with a *gramme* and a half or two *grammes* daily, and increases the dose gradually to 6 or 9 *grammes* a day. Of 207 epileptic patients treated with bromide of potassium, all symptoms of epilepsy ceased in 17, who were under observation during three or four years; 28 remained free from one to two years; in 33 there was marked improvement; in 19 the intervals between the attacks were increased, and these were less severe; in 110 there was no result. Dr. Legrand considers that it is not safe to entirely omit the use of the bromide, even when there has been no epileptic attack for a year. The patients, however, must be watched; for, under the prolonged use of the bromide, mental disturbance, stupor, confusion of ideas, impotence, and acne are apt to set in. The last named affection has sometimes disappeared under the use of arsenic simultaneously with the bromide of potassium.—*Medical and Surgical Reporter.*

Ammonia in Suspended Animation.—A lady in Melbourne recently swallowed, by accident, an ounce of Browne's chlorodyne, which is a mixture of chloroform, morphia, and prussic acid. When seen by her medical attendant, she was, as he imagined, on the point of death—cold, insensible to everything, and giving only occasional gasps as signs of breathing. Recollecting a former case in which a young man who had taken chloroform was revived after death had apparently occurred, the doctor mixed half a drachm of the liq. ammon. fort. with one and a half of water, and within the space of one minute injected the whole into a vein of the arm. In a few minutes the pulse returned, the breathing became natural, and by twenty minutes the whole body had regained its natural warmth, but perfect consciousness did not return for some hours afterward. The patient made a rapid recovery.—*Melbourne Argus; New York Medical Journal*, Sept., 1872.

India-rubber Cloth in Diseases of the Skin.—Since 1868 (*Journal de Méd et de Chir. Pratiques*), M. Hardy, of Paris, has been employing india-rubber cloth in place of poultices or local baths. He employs pieces of cotton, covered with a layer of caoutchouc, and forming an impermeable tissue. This is only applicable to the extremities and to the head; and for the latter region he makes use of vulcanized india-rubber caps. After a certain time the part enveloped becomes not disagreeably warm, and then an abundant sweating takes place, under the influence of which the crusts and the squames which cover the skin are removed, the epidermis spreads over the ulcers, and the skin becomes softened. The results obtained are similar to those obtained by poultices, but preferable for many reasons. Daily experience of the Hôpital St. Louis shows a great rapidity in the modification of the skin: two or three days of application suffice completely to cleanse the scalp when covered with abundant scales of eczema, etc. After forty-eight hours' application of the india-rubber cloth upon hands attacked with chronic eczema, with fissures and cracks in all directions, the wound becomes cicatrized, and the skin recovers its suppleness. This treatment is especially of great value in eczema in the second period of the disease. The crusts are removed, the plastic secretion disappears, and a thin epidermis, glistening and smooth, gradually covers the diseased part, and the eczema rapidly enters the third period. Itching is rarely relieved by this method. In ecthyma the pustules open, and the cure proceeds very quickly, thanks to the envelope. It must be noticed that the cloth must be covered with india-rubber, for the trial made with oiled silk did not succeed. The limbs should be completely enveloped; but the india-

rubber cloth ought only to be tied on at the ends—between the ligature it should form a large sleeve. It should be kept on for a considerable time, and the patient should lie in bed. This method is also employed to make the scales of the psoriasis fall, or to restore the suppleness to the skin in chronic lichen.—*The Doctor*, August 1.

Veratrum Viride as a Hemostatic.—Dr. J. W. Collin calls the attention of the profession to the veratrum viride as a very powerful and very reliable agent for the arrest of hemorrhage, both active and passive. It should be given in doses of from three to fifteen drops, repeated every one, two, or three hours, according to the urgency of the case, always carefully watching its effects.—*American Practitioner*, Sept.

Celery in Amenorrhœa.—Dr. Gamberini commends the volatile oil of celery in amenorrhœa. He gives from one to two and a half grammes daily, in 30 grammes of emulsion. He cites three cases in which the effects were remarkable.—*Revue de Thérap. Med.-Chir.*

Hypertrophy of Tonsils Treated by Chromic Acid.—Dr. B. Frænkel (*Berlin Klin. Woch.*) says that the application of fine needles of chromic acid to the tonsils is almost without pain or danger, and causes a notable shrinking of the parts. By frequently applying this remedy, we can cause the hypertrophy to be reduced to one half its volume. He also injects tincture of iodine into the tonsils in some cases. The iodine is dissolved in 100 parts of glycerine.—*The Doctor*, August 1.

Asthma Cured by a Poisonous Dose of Sulphate of Atropia.—Dr. L. P. Yandell, Jr. reported to the Louisville College of Physicians, some months ago, the case of a young man who was being treated for chronic asthma, and who, in a fit of anger, took one grain of the sulphate of atropia in half a pint of water, at a draught. The symptoms soon became alarming, but finally yielded to the ordinary means, though it was some days before the patient recovered the use of his limbs or the pupils returned to their proper size. From that time until the present the young man has been entirely free from his asthma, and seems to be cured.

Muriate of Berberina in the Enlarged Spleen of Malarial Fever.—Dr. Machiavelli (*Giornale Veneto*) has a paper on the muriate of berberina, in which he states that he has used it hypodermically in fifty-one cases of chills (most of the patients were soldiers, suffering from chronic malaria, with large spleen, in whom quinine

had lost all therapeutic power); thirty-four were cured, and sixteen were improved, whilst one died of miliary tubercles.

Action of Tartar Emetic.—Dr. S. Radziejewsky, of Berlin, has published in *Archives für Anat. Physiol. und wissenschaftl. Med.* a paper upon tartar emetic, in which, as the result of a number of experiments, he arrives at the following conclusions:—

1. The vomiting caused by tartar emetic taken into the stomach is the result of a direct influence upon the mucous membrane of the stomach, and not an effect of absorption.

2. The diminished heart-action which accompanies this vomiting is not a potash action (Kaliwirkung) but a reflex influence.

3. Antimony, besides its influence on the intestinal canal, has a general action; it paralyzes the perceptive faculties of the cord and depresses (in a less degree than arsenic) the heart's activity.—*Schmidt's Jahrbücher*, June 11, 1872.

The Use of Galvanism in Basedow's Disease.—In the *Wiener Medicinische Presse* of August 11, is the history of a case of Basedow's disease cured by the use of a continuous galvanic current applied to the sympathetic system of the neck, reported by Dr. W. Chvostek.

Galvano-Emesis.—Dr. Charlton Fox details, in the *Birmingham Medical Review* for October, 1872, several cases of poisoning by fungi. One of the cases was apparently dying, and as the doctor was preparing to use "galvanism" (induced current?) to produce respiration, the thought struck him that he might induce vomiting by the same instrumentality. Accordingly he passed one pole of an isolated conductor into the fauces, and applied the other pole by means of a wet sponge to the epigastrium. Immediate vomiting ensued, and some large pieces of fungi were thrown up; the application was repeated with similar result until the stomach was emptied. The method was then tried in a second case with similar results. Dr. Fox thinks that the galvanism did not act by irritating the fauces, because the patients were insensible to the fumes of the strongest liquid ammonia.

On the Elimination of Mercurial Salts.—As the result of a number of apparently carefully conducted experiments upon himself, Dr. H. Byarson arrives at the following conclusions (see *Robin's Journal de l'Anatomie*, October, 1872):—

1. The bichloride of mercury taken into the stomach appears in the urine about two hours afterwards.

2. It appears in the saliva in about four hours.

3. It cannot be found in the perspiration.

4. After the ingestion of a full dose, the elimination is complete in about twenty-four hours.

5. A part can be found in the fæcal matters.

Powdered Acetate of Lead for Hæmorrhoids.—M. Decondé has obtained very good results by the application of acetate of lead to hæmorrhoids. He places the finely powdered salt in a canula, which he introduces into the rectum, and then by means of a syringe forces the powder out.—*Revue de Thérap. Medico-Chirurg.*, Aug. 1, 1872.

Glycerine in Diabetes.—Prof. Schultzen of Dorpat (*Berlin Klin. Wochensch.*, Aug. 26, 1872), states that he has obtained very remarkable results from the use of glycerine in diabetes. His cases have not been watched sufficiently long to settle whether the benefit be permanent or only temporary. He gives from one to two or even more ounces daily, avoiding the production of vomiting or purging.

External Use of Fuming Nitric Acid.—Professor Patruban (*Memorabilien*, June, 1872) says that this heroic caustic is often indicated on account of its rapidity and its drying up the tissues. It stops all effusion of blood, and leaves good scars. He uses it for warts and other protuberances of the skin, as condylomata, epulis, hæmorrhoids, and tumors of the nature of nævi.

On the Antagonism of Opium and Belladonna.—In the *Medical Times and Gazette* for September, 1872, Dr. Jas. Johnston details a number of cases of poisoning, which he thinks prove conclusively the antidotal value of atropia, and in the *Bulletin de l'Académie*, of August 27, M. Abeille asserts a similar opinion, and details a case in which he injected morphia for atropia poisoning, produced by a very large hypodermic injection.

Traumatic Anæsthetic Amaurosis Cured by Electricity.—In *La Nuova Liguria Medica*, No. 26, 1871, Dr. Dominique Ramorino reports the case of a man who had suffered for twelve days from an amaurosis immediately following a blow on the eyeball. Three treatments, of ten minutes each, with electrical current (continuous?) sufficed for a perfect cure.—*Revue de Thérap. Med.-Chir.*, October 15, 1872.

Coca in Chronic Atonic Conditions.—In the *Revue de Thérap. Med.-Chir.* of October 15, there are detailed two chronic cases, one of syphilis, the other of partial loss of voice from hypertrophy of tonsils, with granular pharyngitis and laryngeal relaxation, in which wine of

coca was given with most happy effects after failure of the more ordinary remedies.

M. Briquet on Sulphate of Cinchonine.—M. Briquet, so favorably known by his former writings on sulphate of quinine and other preparations of bark, has just read at the Academy of Medicine (October 1) an interesting paper, in which he enters upon an elaborate vindication of the therapeutical properties of sulphate of cinchonine against an unfavorable report pronounced on it by a committee consisting of MM. Lévy, Bouchardat, and Moutard-Martin. The results of this investigation are elaborately detailed in the *Bulletin* of the Academy, to which we must refer our readers for them, contenting ourselves with stating that M. Briquet, founding his statement on 893 cases in which its therapeutical agency has been undoubtedly favorable, declares that its effects in intermittent fever of moderate and medium intensity, in arresting the paroxysms of typhoid fever, in diminishing the size of the spleen, and in neuralgia, are just as well marked as are those of quinine, although less in degree. It is at least, then, a valuable succedaneum to quinine, possessing all its properties, but in a less active degree. It is therefore well suited to the slighter cases of intermittent. M. Briquet attaches great importance to the mode of administration, giving it in doses of fifteen grains—which, however, are to be divided into five or six portions, one to be taken every hour, leaving between the last taking and the expected paroxysm an interval of eight or twelve hours.—*Medical Times and Gazette*, Oct. 19.

Treatment of Hydatid Cysts of Liver by large Openings with Caustics and Astringent Injections.—Prof. Richel terminates a clinical lecture upon the subject in the *Gaz. des Hôpitaux* as follows:—

1. I make a capillary exploratory puncture and examine the liquid obtained chemically and microscopically to assure the diagnosis.

2. The diagnosis being made certain, I apply the Vienna paste to prepare the way for the king of caustics, the chloride of zinc. I destroy thus layer by layer the abdominal walls until I arrive at the peritoneum, which I puncture to test the thickness and firmness of the adhesions. These two points having been favorably determined, I plunge a trochar of the thickness of the thumb into the centre of the eschar and allow the canula to remain until the next day, when I substitute for it a flexible canula of gum of the same character. In this way the liquid of the cysts is certainly caused to infiltrate and traverse the still soft exudation uniting the liver and abdominal walls. After some days, if the opening does not seem sufficient to

allow the ready passage of the large sacs, I dilate with sponge-tents until it will receive a still larger canula.

The injections consist of solution of tannin with a third or fourth part of alcohol. I do not think it prudent to diminish the size of the canula until it is definitely ascertained the walls of the cyst are sensibly modified and already notably drawn together.—*Revue de Thérap. Med.-Chirurg.*, Sept. 15, 1872.

On the Influence of Morphia, Quinia, and Arsenic upon the Destruction of Nitrogenous Tissues.—Dr. H. V. Boeck has been experimenting upon the above subject, and published a paper thereon in the *Zeitschrift für Biologie*, vii. 4, p. 418, 1871. He employed the method of Voil, and found that under the steady use of morphia there was no very distinct lessening of the amount of nitrogen excreted. With quinia there was a much more apparent distinct lessening of the nitrogenous excretions, and that finally there was no appreciable diminution in the throwing off of nitrogenous compounds under the use of arsenic to the daily amount of 0.01 to 0.06 grammes.—*Schmidt's Jahrbücher*, Sept. 9, 1872.

Tincture of Eucalyptus in Intermittent Fever.—Dr. Lorinser, out of 51 cases of intermittent, has had 43 completely cured by the tincture of eucalyptus alone. Once the eucalyptus failed, as did also quinine; once it was vomited; in one case the patient refused to take it continuously. In 11 cases quinine had been given unsuccessfully; 9 of these were cured by the eucalyptus.—*L'Union Pharmaceutique*, Sept., 1872.

Collodion in Herpes Zoster.—By Dr. Wesley M. Carpenter.—"I would call the attention of the profession to the use of collodion in this disease. It may have been noticed before this, but I have not happened to see it, if such is the case.

"One of the most distressing symptoms in this disease is the intense stinging, burning, superficial pain which often accompanies the eruption. I have no reference to the so-called 'characteristic pain,' which may continue a long time after the disappearance of the eruption.

"Great relief may be given from this burning pain by the application of collodion to the surface occupied by the vesicles. This may be done with a feather or camel's-hair brush. The collodion forms a pellicle over the surface of the vesicles, which protects them from the air, and renders them less liable to rupture. It may be applied at any stage of the eruption, and, in most cases, acts like a charm in giving relief to this annoying accompaniment.

"In general, the disease needs no other local treatment."—*Medical Record.*

MATERIA MEDICA.

BROMINE WATER AS A TEST FOR CARBOLIC ACID AND ITS ALLIES.

H. Landolt proposes bromine water as the most delicate test for very dilute solutions of carbolic acid. The reagent must be added in excess, and a yellowish-white flocculent precipitate of tribromophenol ($C_{12}H_3Br_3O_2$) falls. This is soluble in solutions of soda, potash, and ammonia, and will not then fall on the addition of muriatic acid. If the solution to be tested is very acid, it must be neutralized, and very strong precipitates are often not rendered absolutely clear by the alkalies mentioned. The precipitate may be filtered out, washed, then put in a test tube with sodium amalgam and water, and gently warmed and well shaken. If the whole be then placed in a shallow vessel and sulphuric acid added, the phenol is set free, collects in drops, and gives off a strong odor.

This reaction may be used to discover phenol in urine. The latter was treated with excess of bromine water, and after many hours a brown flocculent deposit formed on the bottom of the vessel. This was gathered on a filter, washed, and treated with sodium amalgam in the manner described, when the smell of phenol was manifested in a most certain manner.

Hlasiwetz and Barth have found that a watery solution of paraoxybenzoic acid throws down a precipitate with bromine water of tribromphenol, and the isomeric salicylic acid affords a precipitate of dibromsalicic acid, which, when treated with sodium amalgam, gives an odor similar to that of phenol. Kresol, thymol, and guajacol, and other of the phenol series, give similar precipitates.

The bromine water gives, with many other substances, precipitates which may, however, be easily distinguished from those of the phenol group by means of the sodium amalgam.

With a watery solution of toluidin, bromine water yields a yellow, changing into red precipitate, soluble in muriatic acid, insoluble in

sulphuric acid and soda-lye. In a not too dilute solution of anilin, a flesh-red precipitate falls.

In not too dilute solutions of salts of quinia, quinoidine, cinchonia, strychnia, and narcotina, a yellow or orange-yellow precipitate, soluble in muriatic acid, insoluble in potash or ammonia.— *Vierteljahrschr. für Pharm.*, October, 1872.

PREPARATIONS OF PHOSPHORUS.

In a prize essay in *Transactions of the American Medical Association* for 1872, Dr. Saml. R. Percy proposes the following preparations of phosphorus:—

Take a good sample of olive oil, almond oil, or lard oil, heat it slowly in a Florence flask or porcelain capsule to 480° F. The heat should be gradually raised so that half an hour should be consumed before the oil is brought to this temperature. Let it stand till cool, then filter it into a clean, well-dried bottle. Into this bottle add transparent fragments of phosphorus, in the proportion of one grain of the phosphorus to every 100 minims of oil. Place the bottle in a bath of water at 180° F., and agitate until dissolved.

To prepare a *solid oil*, which may be used in pill or capsules: Heat a quantity of cocoa butter in a porcelain vessel to a temperature of 400° F., filter whilst hot, and cast into thin sheets which can easily be broken. Take of this a weighed quantity, melt over a water bath, and for every 100 grains add one grain of transparent phosphorus in small pieces; dissolve. When almost cold, add one or two drops of naphtha to deprive it of its luminosity. This may be either poured while warm into gelatine capsules, or it may be poured into shallow dishes. When cold, small pieces may be easily and dexterously reworked in a porcelain mortar into a pill-mass, and quickly rolled out into pills, which may be coated with gelatine, collodion, or white shellac dissolved in strong alcohol; each grain equals $\frac{1}{100}$ gr. of phosphorus. Mutton suet may be substituted for the cocoa butter.

Dr. Percy states that there is in brain a comparatively large amount of an alkaloidal hypophosphite containing both glycerine and nitrogen, which forms a base to the lower oxide of phosphorus, and proposes to imitate this salt in the following preparations: No. 1 for pill use; No. 2 for use as a solution.

Take of purified cocoa butter or of beef tallow prepared in the same manner, 1,000 grains, put it into a Wolf's apparatus or a clean, wide-mouthed eight-ounce vial, to which a cork has been adjusted,

with two glass tubes, one passing to the bottom of the bottle, and the other terminating near the cork; add 100 grains of Valentine's beef extract. Put on a water bath, and keep it for some time at 212° F., agitating frequently to mix the beef extract and fat well together. Add eleven grains of phosphorus in small pieces. When the phosphorus is all dissolved, attach an India-rubber tube, connected with a reservoir of oxygen gas under pressure, to the glass tube that leads to the bottom of the bottle. Allow the oxygen to pass slowly through the mass, still keeping it constantly agitated and at 212° F. Continue this until all luminosity has ceased, and until all the smell of phosphorus has gone. Take it out of the water bath, allow the oxygen to pass slowly through it, occasionally agitating until the fat begins to become solid, then cork tightly, and leave for a few days. Heat again in a water bath, and if any luminosity is visible, add pure oxygen. Take out the cork and glass tubes, and continue the heat till all the bubbles of oxygen are driven off. Pour into capsules or into cakes, to be made into pills.

No. 2. Take of lard oil, purified, 1,000 grains; Valentine's beef extract (which is more fluid than any other), 100 grains; keep in a water bath at 110° F., agitating to mix the beef extract and oil; add eleven grains of clear phosphorus in small pieces; when all dissolved, bring the temperature to 212° F., and strain; attach the bottle to the oxygen reservoir, and treat it exactly as described in the last formula.

Dr. Percy states that he has used these latter preparations as nerve tonics in a number of cases with very good effect.

A METHOD OF DETECTING THE FALSIFICATION OF ESSENTIAL OIL OF BITTER ALMONDS WITH NITROBENZINE.

BY EDME BOURGOIN.

Some time since I indicated a method of detecting the falsification of oil of bitter almonds with nitrobenzine. It consisted in agitating 2 or 3 grammes of the liquid with a fraction of its weight of solid caustic potash in a test tube. After some moments of shaking, the yellow color (permanent if the oil be pure) changes to a characteristic reddish tint. If the proportion of the nitrobenzine be large, this red color gives way to a green, which disappears in a day or two. These phenomena only are qualitative, and when the results are not marked, leave a doubt. The following plan is both qualitative and quantitative, and certain in its results.

In a flask containing some 100 grammes of emery, and provided with a large opening, there are put from 5 to 10 grammes of the essence, and from 20 to 40 cubic centimetres of concentrated bisulphite of soda; agitate briskly for a few minutes to favor the union of the salt with the oil of bitter almonds. Add rectified ether, which lays hold of the nitrobenzine. Remove the ether with a pipette and repeat the process; in this way all the nitrobenzine is taken up. Evaporate the united ethereal liquid over a sand-bath, and weigh the residue, which is nitrobenzine. To prove that the residue is nitrobenzine, put 4 or 5 drops in a tubular retort containing a pinch of iron-filings, and a little acetic acid at 8 degrees. Heat carefully, so as to obtain in the test tube about a gramme of distilled liquid, neutralize this with lime after the manner of M. Berthelot, and add 2 or 3 drops of the hypochlorite of lime; there will then develop a beautiful violet blue color, which is decisive as to the presence of aniline, *i.e.*, that of nitrobenzine in the primitive liquid.—*L' Union Pharmaceutique*, August, 1872.

MATERIA MEDICA FALLACIES.

BY DR. SQUIBB.

Among the articles that have been introduced in the dietary department, and have taken a firm stand in the materia medica, is *pepsin*. Generally, however, patients have been in the habit of taking starch rather than pepsin. Once get up a reputation concerning a certain variety of this agent, and the manufacturer has a good start for making money. Some specimens examined were good and others bad. The name of the maker is no guarantee, as it may be good at one time and poor at another. While the proprietor is looking after the money column, the manufacture is intrusted to another. The fresh supply of pigs' stomachs must come from the western pork-markets.

The pancreatic emulsions and preparations of bismuth and pepsin, so fashionable now, cannot be recommended: bismuth and pepsin cannot exist together. Those fashionable mixtures of beef and iron—as Vinum cibi, Vinim cibi et ferri cum cinchona, etc.—are gross frauds; only money is in them. Hardly any cod-liver oil will pass muster except it is tasteless; and his impression is that many of these preparations are not cod-liver oil at all, only oil made up for the market. Good oils should neither be too dark nor too light, but of a medium color. The dark varieties are made of livers in a state of decomposition. There are good cod-liver oils in market which come from Norway and Newfoundland. The reason that the Norwegian oil is less

rancid than others is, because it is never made at a less temperature than fifty degrees; consequently decomposition is avoided. Oil, when in use, should be kept in a cool place, as a refrigerator, and after each dose is given the glass should be thoroughly washed. Small pieces of ice put in the doses of disagreeable substances, like cod-liver oil, render the agent almost tasteless. Those physicians who eschew the fashionable remedies take to the syrups, such as Aiken's syrup, etc. The lacto-phosphate of iron is based on fallacies like the others; but it is very taking, and is advocated by Horsford and others. Physicians are anxious to get solutions of phosphorus into the stomach, but before it gets there it becomes oxidized.

Another popular fallacy of the day is the use of sugar-coated pills or medical confectionery. Coroners have found these pills, after death, in the stomach and intestines, undissolved. Medicines should be given in such a shape that they will be quickly dissolved. It is not an easy matter to get the hard coat off of the pills. Glycerine should be used in compounding pills, to render them soft. Pills made in this way are easily dissolved in the stomach. He has been astonished that Blancard's pill has been so useful as has been stated—it being covered with a metallic coat.

Medicines in capsules are not to be advocated—they being not easily dissolved.

The use of various forms of divided medicines, particularly "The Divided Medicine Co.'s" preparations, is another fallacy. It is nothing new, but an old way of preparing medicines. This way of dosing might be good if the physician would put the medicine up; but to purchase these preparations of companies is dangerous pharmacy. —*Medical Record.*

PREPARATION AND PROPERTIES OF SULPHOVINATE OF SODA.

In a paper read before the Société de Pharmacie de Paris (*Jour. de Pharm. et de Chim.*) M. Limousin alludes to the peculiar purgative properties of sulphovinate of soda as already pointed out, in 1870, by Dr. Rabuteau. The high price of the salt as then prepared would prevent its general employment and, after several attempts, M. Limousin has succeeded in devising a more economical mode of preparation, a description of which is appended to this note. The sulphovinate has the cool taste peculiar to all the salts of soda; it is nearly free from bitterness, and has a sweet after-taste that makes it more easily tolerated than the sulphate, while, as a laxative, it is about three times more powerful than

that salt, and much more prompt. It is claimed that its administration is not followed by constipation, nor is there the danger of the formation of vesical calculi which sometimes attends the use of salts of magnesia. The salt may be administered in water; or sweetened water; or water charged with carbonic acid. In the latter form it is more agreeable than citrate of magnesia, and will keep unaltered for a long time. The process proposed by M. Limousin is as follows:—A kilogr. of pure sulphuric acid, sp. gr. 1.715, and a kilogr. of concentrated alcohol, about 96°, are introduced by means of two funnels (one for the alcohol and the other for the acid) into a third funnel arranged in a flask plunged into a freezing mixture or kept in a current of cold water, the flow of the two liquids into the flask being so regulated as to keep the alcohol in excess. The mixture is kept for four or five days at a temperature of 20° C. to 25° C., then diluted with five or six litres of distilled water, and saturated with about 1,500 grammes of pure carbonate of baryta diluted with a sufficiency of distilled water. When the point of saturation is attained, the liquid is left to deposit the sulphate of baryta, and afterwards filtered. The solution of sulphovinate of baryta so obtained is saturated by 850 to 900 grammes of pure carbonate of soda dissolved in four litres of distilled water. When no more precipitate is formed by the addition of the alkaline solution, and the liquid is neutral to test paper, the transformation of the sulphovinate of baryta into sulphovinate of soda is complete. The liquor, decanted and filtered, is evaporated in a water bath to about sp. gr. 1.33, and left to crystallize. The crystals, after draining, are dried in a stove. The salt so obtained is of great purity, and may be kept without alteration. With the quantities above indicated, about one kilogr. of the product is obtained. If the salt be free from sulphate of soda and sulphovinate of baryta, chloride of barium and sulphuric acid will not give a precipitate in a solution in distilled water.—*Canada Pharmacist.*

Borate of Manganese in Boiling Linseed Oil.—We understand that the use of borate of manganese is rapidly superseding the ordinary dryers, such as litharge, red lead, acetate of lead, sulphate of zinc, or oxide of manganese, which have been heretofore used in the boiling of oil. The advantages are the production of a lighter colored oil, the avoidance of a sediment, and the consequent reduction of loss during the process. The proportion of borate employed is three pounds and three-quarters to one hundred gallons of the oil. The salt should be rubbed up, or thoroughly mixed with a portion of the oil before putting into the pan. The whole is then well mixed and stirred during the application of heat, as in the old method.—*Ibid.*

PREPARATION OF SYRUPS WITHOUT HEAT.

L. Oryński recommends very highly (Proc. American Pharm. Asso.) the following methods. He says syrups so prepared will keep very long and never crystallize :—

"Introduce thirty to thirty-two ounces of sugar (according to the temperature) into a percolator in which previously has been introduced a piece of lint or sponge well adjusted, and gradually pour on sixteen ounces of liquid so as to make the percolate (syrup) pass drop by drop. If the liquid is turbid, pour it back into the percolator till the syrup *passes clear*."

The syrupus scillæ comp. is prepared as follows :—

"The roots are finely ground and macerated for twelve hours with as much diluted alcohol as they may absorb, then the tincture is obtained by percolation and evaporated to the consistence of a syrup. The extract thus obtained is mixed with a sufficient quantity of water, set aside till cool, and then filtered to separate all the albumen and other impurities. The liquid is now poured gradually into the percolator, in which the sugar has been previously introduced." The result, as the sample testifies, is a syrup clear and pleasant to the eye. It will neither crystallize nor ferment.

The syrupus scillæ simplex is made from the squills not picked. It would be yet clearer if the squills are select white. The vinegar of squills for this syrup must be made several weeks previous, so that the albumen and other sediments which always are formed may be separated by filtering.

The syrupus pruni virgin. is made by macerating for an hour the bark with as much water as it may absorb, and then the percolation is followed in its usual way till the necessary quantity of liquid is obtained, which gradually must be added to the sugar introduced in a glass cover percolator.

The syrup of tolu, No. 2, is made by slightly digesting the balsam in a water bath ; the liquid is filtered, and the syrup is prepared as above mentioned. This syrup is very cheap, and may be used in place of other pleasant aromatic syrups.

All the medicinal syrups, I think, may be prepared "via frigida," and, I am quite sure, would give satisfaction to everybody.

The advantages of this process are :

First. The syrups are clear, and there is no necessity of purifying them.

Secondly. They possess their medicinal properties unaltered, since many drugs may be injured by heat, more especially aromatics and those containing readily volatile substances ; and,

Thirdly. The syrups will neither crystallize nor ferment, and may be prepared in large quantity, provided the vessels or bottles are clean before filling them with syrup.

Testing Ethylic and Acetic Ethers for Alcohol.—By C. Frederking.—In a graduated glass tube equal volumes of ether and anhydrous glycerine are thoroughly mixed; the alcohol obtained in the ether is taken up by the glycerine, and its volume increased, whereas that of the ether decreases by the amount of alcohol contained in it. Ether may therefore be deprived of water as well as alcohol previous to its rectification, in order to produce it pure, and the glycerine mixed with the water or alcohol may again be obtained pure by evaporation. In this manner essential oils may also be tested with glycerine for the amount of alcohol fraudulently added.—*Polyt. Centralblatt*, 1871, p. 728, abstracted in *Pharmacist.*

Opium Culture in Tennessee.—In a paper read at the late meeting of the American Pharmaceutical Association, Mr. Lillard stated that imported seed was planted in the spring of 1871, with good success, large and vigorous plants being the result, while the flowers and capsules were unusually large. The seed is sown about the same time as oats, in soil prepared as for cotton. It is planted in drills; the young plants are thinned out to from four to six inches apart, and cultivated similarly to cotton. Soon after the flowers drop off (this year it occurred in June), the capsules are cut horizontally, *on one side*, early in the morning. (The knife used resembles a cupping lancet.) The milky exudation coagulates rapidly, becoming first pale red, and then a rich brown soft mass. The next morning it is scraped off and dried in the sun, and the following morning the other side of the capsule is similarly scarified.—*Medical and Surgical Reporter.*

Chlorine Water.—According to Mylius the best method of administering chlorine water is with simple syrup and mucilage of gum arabic, the latter ingredient being for the purpose of restraining the evaporation of the chlorine water; all fruit or other complex syrups should be eschewed.—*Vierteljahrschr. für prakt. Pharm.* October, 1872.

Freezing Point of Bromine.—H. Baumhauer asserts that bromine consolidates not at −7.3, as is commonly believed, but at −24.5°C. Also that it forms not bluish gray, but reddish brown crystalline masses. The old melting point was probably due to the bromine containing water.—*Ibid.*

TABLE SHOWING TESTS FOR VARIOUS FATTY OILS.

	AT COMMON TEMPERATURES.				AFTER BOILING.		
5 vols. of oil are well agitated with 1 vol. of solution of potash of 1.34. The mass is	snow white. Bleached Olive oils. Almond oils. Rape-seed oils, when very fine.	yellowish. Olive oil. Oil of Sesame. Rape-seed oil. Poppy oil.	green. Linseed oil. Oil of Hemp-seed. Oils containing Copper, or artificially colored.	rose-colored. Refined Rape oil.	brown and stiff. Hemp oil.	yellow brown and liquid. Linseed oil.	red. Train-oil.
Equal vols. of the oil and of red fuming nitric acid are to be poured in a test-glass. At the point of contact there forms a middle zone, which is	small and a clear green, the oil itself is flocculent and opaque. Almond oil.	dark green; toward the upper surface rose-colored. Poppy-seed oil.	broad and a beautiful blue green. Olive oil.	brownish red. Liver oils.	green, and toward upper part red. Linseed oil.	brownish red; toward the lower part greenish. Rape oil.	The whole mass of oil becomes in a little while red. Linseed oil.
	10 DROPS OF OIL AND 2 DROPS OF SO_3.			EQUAL VOLUMES OF OIL, AND OF ACID WITHOUT SULPHURET OF CARBON.			WITH SULPHURET OF CARBON.
In a test-glass, the oil was poured on concentrated pure sulphuric acid. The point of contact is	beautiful green, with brown streaks. Rape oil.	yellow; on shaking, brownish olive-green. Poppy oil. Oil of Madia.	red, soon turning into black streaks, showing themselves in smoky windings through the liquid. Train oil.	with shaking, beautiful dark green. Rape oil.	green. Linseed oil. Hemp oil.	red. Train oil.	with 20 vols. of sulphuret of carbon, splendid violet, quickly passing into brown. Train oil.
With the Elaidin proof the oil mass	firm, friable, and white. Almond oil. Olive oil. Bleached rape oil.	firm, friable and yellow. Rape oil.	firm and red. Oil of sesame.	waxlike and white. Castor oil.	in the Elaidin there appear oil drops and streaks. Mixed oil, in which are drying oils.	unaltered. Linseed oil. Poppy oil. Nut oil.	Æther, and oils put into olive oil for correction of odor, swim upon the Elaidin.
Boiled with litharge and water forms a plaster, whose consistence is	firm Olive oil.	smeary. Rape oil. Almond oil. Oil of sesame.	smeary, but drying in time. The drying oils.				
Solubility in alcohol, proportion	1 to 1. Castor-oil.	1 to 25. Poppy oil.	1 to 30, Oil of hemp-seed.	1 to 40, Linseed oil.	1 to 60, Almond oil.		
The specific gravity of the oil is	0.913, Almond oil, and oil of Brassica Nap.	0.914, Almond oil, and oil of Brass. Camp.	0.918, Olive oil.	0.922, Oil of sesame.	0.926. Oil of sunflower.	0.950.0.970, Castor oil.	0.930, Linseed oil.
Temperature according to Celsius, at which the oil passes from solid to liquid	—27°. Oil of Hemp-seed.	—16° to —20° Linseed oil. —18 Castor-oil.	—16° Oil of sunflower. —20° to —25° Almond oil.	—6° Oil of Brass. Nap.	—4° Oil of Brass. Camp.	—5° Oil of sesame.	—25°. Olive oil. —6° to —8° Lard oil.

The Elaidin proof is made as follows: 4 parts of the oil, and 2 parts of NO_3 of Sp. gr. 1.20 are poured into a test-glass, and a half part of copper filings are added. Hyponitric acid is generated even in the cold, and changes the oil into Elaidic acid.—*Zeitschrift der Apothek. Vereins.* June 20.

SUPPOSITORIES.

Spermaceti is a very cheap substance; it is always commercially pure—that is, not absolutely pure, but pure enough for pharmaceutical purposes. As this substance, by reason of its inherent whiteness and natural purity, does not require to be subjected to any bleaching process, or other injurious influences, consequently its originally bland and indifferent character particularly adapt it as the proper solidifying component of unctuous mixtures.

Pure lard is very cheap, and can always be procured without much difficulty. But the proper manner for the pharmaceutist to obtain it is to purchase the leaf lard, and render it himself. In this condition it is then superior to most fatty matters, pure almond or olive oil not excepted. To enhance its permanence it should always be benzoinated, and thus prepared can be employed for most pharmaceutical purposes, with but few exceptions.

All so-called cerates, ointments, and suppositories should have as a basis a plain mixture of spermaceti and lard, to the exclusion of white wax and olive oil.

The writer finds that a mixture of equal parts of spermaceti and pure lard forms an excellent excipient for suppositories, equal in all respects to the doubtful oil of theobroma, and therefore recommends this composition as the best procurable substance for the purpose.

But the writer's object, on this occasion, was to make special allusion to the preparation of the popular class of suppositories containing solid extracts. No doubt the greatest difficulty in connection with the suppository question is the proper incorporation of solid extracts. The method at present in use has been described above. But with this procedure the mixture often becomes too thick to pour conveniently, and if heat be applied to liquefy it, the extract most usually agglutinates and sinks to the bottom of the vessel in compact and unmanageable masses, the operation thus resulting in a complete failure. However, the writer finds that if some inert powder, as starch or French chalk for instance, in proportion of several times the weight of the extract be also added, then no difficulty whatever will be experienced in the manipulation. The mixture can often thus be fully liquefied without danger of precipitating the extract, which is held in perfect suspension by the powder. The powder can also be any pulverized crude material from which the extract is derived, but it is best of such a nature as not to become doughy when moist. The least possible moisture should be admitted, and to attain this the writer combines the extract by a peculiar manipulation. The spermaceti is first fused, the lard is then added, and, after melting, a portion

of the mixture is poured upon the extract in its ordinary state, without any addition whatever. The extract and solidifying mass can then be very easily and uniformly mixed with the pestle; the inert powder, which is preferably starch, is then also mixed in; the smooth mass is now added to the remainder of the fused menstruum, thoroughly mixed, and poured with constant stirring into the moulds which were previously cleaned and well refrigerated with a mixture of ice and water. The suppository will have solidified in a few moments, and can be easily extracted from the mould by lightly tapping the edge of its base upon a solid support.—*Pharmacist*, October, 1872.

CARBOLIC ACID AND CREASOTE.

BY PROFESSOR FLUCKIGER, BERN.

A good plan for distinguishing these two substances is as follows:

	Parts.
Take *a*. Solution of perchloride of iron about 1.34 spec. gr..	1
b. Creasote, that is to say, the liquid to be tested for creasote.....	9
c. Alcohol containing about 85 per cent. of absolute alcohol	5
d. Water.....	60

Now $a+b$ mixed assume no peculiar color.

$a+b+c$ furnish a green solution.

$a+b+c+d$ form a turbid mixture of a dingy brownish color, drops of creasote being separated.

On the other hand, in the case of carbolic acid, suppose likewise—

1. The above ferric solution weighing equally.....	1
2. Carbolic acid (phenol).....	9
3. Spirit of wine, as above.....	5
4. Water.....	60

Now 1+2 will show a yellowish hue.

1+2+3 yield a clear brown liquid.

1+2+3+4 display a beautiful permanently blue solution, without separation of carbolic acid, or the few drops sinking down may be redissolved by shaking.

Mr. Th. Morson has pointed out that glycerine is also a good test for the purpose under notice, creasote being not or almost not soluble in that liquid, whereas, as it is well known, carbolic acid readily mixes in all proportions with glycerine. This, however, requires a slight modifica-

tion. True creasote, which stands the above test, is perfectly miscible in any proportion with anhydrous or nearly anhydrous glycerine, but it is not so with a somewhat diluted glycerine; a clear solution of creasote and of the same weight of anhydrous glycerine becomes turbid on addition of a little water, whereas a similar solution of carbolic acid may be diluted with water without separation of carbolic acid.

The blue coloration of carbolic acid, due to perchloride of iron, enables us to discover it when mixed with creasote, but not to prove the presence of creasote in carbolic acid. The latter question, however, seems to me of less practical importance; yet creasote, if present to some extent, would quickly separate in the above process, $a+b+c+d$, if more water be added. For this purpose the addition of perchloride of iron would be useless.—*Pharm. Jour.*, London.

TABLE SHOWING THE SOLUBILITY OF SOME CHEMICALS IN GLYCERINE.

KLEVER.—100 parts glycerine dissolve the annexed quantities of the following chemicals:—

Acid. arseniosum	20	Morph. acet	20
" arsenicum	20	" muriat	20
" benzoicum	10	Phosphorus	0.20
" boracicum	10	Plumb. acet	25
" oxalicum	15	Potas. arsen	50
" tannicum	50	" chlorat	3.50
Alumen	40	Potassii bromid	25
Ammon. carb	20	" cyanid	32
" muriat	20	" iodid	40
Antimonii et potas. tart	5.50	Quinia	0.59
Atropia	3	Quiniæ tanat	0.25
Atropia sulph	33	Sodæ arseniat	50
Barii chlorid	10	Sodæ bi-carb	8
Brucia	2.25	" borat	60
Calcii sulphid	5	" carbonat	98
Cinchonia	0.50	" chlorat	20
Cinch. sulph	6.70	Sulphur	0.10
Cupri acetat	10	Strychnia	0.25
" sulph	30	Strychn. nitrat	4
Ferri et. potas. tart	8	" sulphat	22.50
" lactat	16	Urea	50
" sulph	25	Veratria	1
Hydrarg. chlor. corros	7.50	Zinci chlorid	50
" cyanid	27	" iodid	40
Iodinium	1.90	" sulphat	35
Morphia	0.45		

TABLE SHOWING AMOUNT OF MOISTURE IN AIR-DRIED DRUGS.

BY GEO. W. KENNEDY.

1.—Roots, Rhizomes, Etc.

	Loss.	Yield.	Gain by reabsorption.
Lappa	16.25	83.75	10.40
Calumba	16.	84.	11.50
Taraxacum	15.25	84.75	9.75
Asclep. tuber.	15.25	84.75	10.75
Cypripedium	14.	86.	5.
Gentiana	13.	87.	9.
Panax	12.75	87.25	4.75
Krameria	12.67	87.33	9.17
Polygonatum	12.60	87.40	6.80
Scilla	12.50	87.50	8.50
Althea	12.50	87.50	8.50
Gossypium	12.40	87.60	6.40
Helleborus Niger.	12.	88.	8.25
Colchicum	11.50	88.50	8.
Inula	11.40	88.60	6.40
Rheum	11.33	88.67	8.33
Spigelia	11.25	88.75	7.25
Podophyllum	10.33	89.67	6.73
Serpentaria	10.33	89.67	5.83
Senega	10.30	89.70	5.67
Asarum canad.	10.25	89.75	3.85
Valeriana	10.20	89.80	6.
Sarsaparilla	9.	91.	4.50

2.—Stems and Wood.

Dulcamara	12.	88.	6.33
Quassia	10.	90.	8.

3.—Barks.

Rhus glabrum	14.67	85.33	8.67
Xanthoxylum	14.50	85.50	8.50
Cinamomum	10.50	89.50	6.50
Prunus Virg	10.	90.	5.25
Cinch. calis	9.	91.	2.80

4.—Herbs.

Absinthium	14.	86.	8.50
Hedeoma	12.25	87.75	8.25
Lobelia	11.60	88.40	5.60
Leonurus	10.80	89.20	5.20
Glechoma	10.33	89.67	6.33

5.—Leaves.

Uvularia perfol.	18.	82.	8
Conium	16.	84.	6.
Cataria	14.50	85.50	11.50
Aconitum	14.	86.	9.25
Belladonna	13.75	85.25	5.75
Hyoscyamus	12.25	87.75	5.85
Senna Alexand.	12.20	87.80	7.20
Melissa	11.75	88.25	7.80
Matico	11.	89.	6.
Tussilago	10.50	89.50	4.67
Salvia	10.50	89.50	8.
Stramonium	10.33	89.67	7.83
Rosmarinus	10.25	89.75	6.65
Uva ursi	10.	90.	4.
Buchu	9.20	90.80	4.40

6.—Flowers.

Lavandula	14.25	85.75	7.75
Arnica	13.80	86.20	8.80
Anthemis	9.80	90.20	6.80

7.—Seeds.

Stramonium	10.	90.	7.

8.—Powdered Drugs.

Rheum	8.25	91.75	5.25
Inula	8.33	91.67	5.30
Calumba	8.50	91.50	7.
Colchici rad.	9.	91.	6.
Sanguinaria	9.	91.	7.
Cimicifuga	9.80	90.20	4.80

CHLORALUM.

Prof. Fleck has lately concluded an examination, on behalf of the Saxon Government, of chloralum solution, chloralum powder, and chloralum wool and wadding.

The liquid contained—	PER CENT.
Water	82.32
Chloride of lead	0.15
Chloride of copper	0.10
Chloride of aluminium	13.90
Chloride of iron	0.42
Chloride of lime and gypsum	3.11
	100.00

The powder, in addition to the above salt, contained 0.72 per cent. of chloride of arsenic and 32.15 per cent. of clay and sand. The result of the analysis left no doubt of the true value of the preparations and of the mode of manufacture.

To ascertain the comparative value of chloralum and other disinfectants, a series of parallel experiments were undertaken, and the value of those substances for disinfecting and clarifying is expressed by the following figures:

Chlorinated lime	100.0
Caustic lime	84.6
Alum	80.4
Sulphate of iron	76.7
Chloralum	74.0
Chloride of magnesium	57.0

In conclusion, it is observed that as the chloralum preparations contain also the chlorides of lead, copper, and arsenic, their use is not unattended with danger, especially if used internally, or for open and festering wounds.

The results show that chloralum and its preparations belong to the class of *secret remedies.—Pharmacist*, August.

Paraffin.—Not long ago the whole stock of paraffin wax in the world did not exceed four ounces, which was carefully preserved in the laboratory of Professor Liebig as a chemical curiosity. There is now produced in Scotland alone a quantity of not less than 5,800 tons annually.—*Chemist and Druggist.*

Preparation of Camphor.—According to M. Bechtinger, in the island of Formosa there is a colony of Chinese who gain a poor livelihood by the preparation of camphor. They use for that purpose a large furnace of clay, into which they introduce a large clay cylinder divided into three superimposed compartments. The lower of these is filled with water. The middle reservoir, which communicates by small orifices with both the others, is filled with the camphor wood

cut into very small pieces. When the furnace is lighted, the steam rises through the middle chamber, and, forcing its way amongst the fragments of wood, finally rises to the upper chamber, carrying with it the camphor, which crystallizes in the highest receptacle. The camphor thus obtained is sent to Bangka, and thence to China by the port of Tamsui.—*Journal de Pharm. et de Chemie*, October, 1872.

Solubilities of Sugar in Dilute Alcohol and in Water.—100 parts (30 alcohol, 70 water) dissolve at 0° C., 65.5 parts of sugar; at 14° C., 67.9; at 40° C., 82.2 parts.

100 parts (50 of each) dissolve at 0° C., 45.9 parts of sugar; 14°, 47.1 parts; at 40° C., 68.4 parts.

100 parts (10 water, 90 alcohol) dissolve at 0° C., 0.7 parts; at 14°, C., 0.9; and at 40° C., 2.3 parts.

Absolute alcohol dissolves nothing.

Pure water dissolves at 0° C., 65 parts of sugar per 100; at 15° C., 66.1 parts; at 30° C., 69.8 parts; at 50° C., 82.7 parts.—*M. Scheibler, Deutsche Chemische Gesellschaft.*

Adulteration of Sulphate of Quinine.—There is no doubt but that quinia is largely adulterated in this country with the cheaper alkaloids of bark, and the *Indian Medical Gazette*, Aug. 1, states that out of twelve samples of sulphate of quinine purchased in Calcutta from as many different shops, six were largely composed of sulphate of cinchonia. The former alkaloid being in the form of needles, the latter of prisms, the microscope, of course, easily detects the fraud.

On the Discovery of the Adulteration of Volatile Oils with Alcohol.—Puscher some time since proposed that fuchsin should be employed to discover the above adulteration, as it is insoluble in the volatile oil when pure, but soluble in the adulterated specimens. Hager & Otto have, however, showed that there are so many oils which, even when pure, dissolve fuchsin that the test is of no value. Hayes' tannin test appears more trustworthy: if in a volatile oil the tannic acid remains pulverulent there is almost certainly no alcohol there.—*Vierteljahrschrift für prak. Pharm.*, October 1, 1872.

A Fluid Adhesive Plaster.—Take of

Pulverized damar resin....	560 parts.
Oil of sweet almonds.....	142 "
Castor oil.....	70 "
Glycerine.....	39 "
Red aniline.....	q. s.
Spirit of sulphuric ether...	225 to 240 parts.

Add the aniline.

Melt the first four materials together in a copper vessel, and after partial cooling add the spirit. In this way is made an emulsion like liquid of syrupy consistency, which may be spread on stiffened linen, skin, etc., and which in nowise irritates the skin. The surgeon may put the preparation directly on the wound, without previous warming. —*Ibid.*

Quantitative Examinations of the Alkaloidal Strength of Ipecac, Aconite, Tobacco, and Conium.—There is a paper of several pages length in the October number of the *Vierteljahrschrift für prak. Pharm.* on the above subject by O. Zerroffsky. He found ipecac root to yield emetia as follows:—

An acid decoction yielded 3.74 per cent. of the root used.

A spirituous tincture yielded 3.82 per cent. of the root used.

A chloroform preparation yielded 2.87 per cent. of the root used.

The dried root of Aconitum napellus yielded 1.6 per cent. of alkaloid; the fresh herb of Aconitum Stoerkeanum (just before opening of flowers), 0.17 per cent.; the fresh root of the same, 0.116 per cent.; the fresh flowering buds, 0.342 per cent.; the fresh herb of Aconitum napellus, 0.176 per cent.; the fresh root, 0.123 per cent.; the fresh flower buds, 0.435 per cent.; the fresh herb of A. variegatum, 0.167 per cent.; the fresh root, 0.109 per cent.; the fresh flower-buds, 0.453 per cent.; the fresh root of A. Stoerkeanum (after opening of flowers), 0.271 per cent.; the fresh root, 0.277 per cent.; the fresh flowers, 0.729 per cent. An ordinary sample of Russian tobacco yielded 5.8 per cent. of nicotine.

With conium the experiments did not yield any definite results; the causes of this are discussed by the author.

A NEW ALKALOID FROM VERATRUM SABADILLA.

According to M. Weigelin, there is a new alkaloid in sabadilla, for which the name of sabadilline is proposed. It is prepared by first making a decoction with water acidulated with sulphuric acid, concentrating and adding alcohol to precipitate the mucilaginous matters. After twenty hours' repose, decant, distil off the alcohol, and precipitate the filtered liquid by ammonia; dissolve the precipitate in ether, and evaporate the latter until it deposits a reddish resinous substance, which may be changed into a whitish powder by a series of solutions and precipitation in water.

The filtered ammoniacal solution contains the sabatrine, which is removed by agitation with amylic alcohol. Distillation is then prac-

tised; the residue dissolved by alcohol, containing some water, deodorized by animal charcoal, the alcohol distilled off and ammonia added to the watery residue. The product is agitated with ether, which dissolves out the sabatrine and leaves the pure sabadilline. The latter may be obtained in crystals by means of benzine. It is scarcely soluble in ether. Concentrated sulphuric acid dissolves it with a red color. Ammonia does not precipitate its solutions. Neither the bichromate of potash, the ferrocyanide, or the iodide of potassium react upon it. It is neither a sternutatory or emetic. Its formula is $C_{41}H_{46}Az_2O_{12}$; that of sabatrine, $C_{51}H_{86}Az_2O_{17}$; that of veratine, $C_{52}H_{86}Az_2O_{15}$.—*Journ. de Pharm. et de Chim.*, Sept., 1872.

Method of Estimating the Strength of Ammonia in a Solution.—The following method has been perfected by M. H. Fleck:—Make an alkaline solution of iodide of potassium by dissolving 50 grammes of iodide of potassium and 160 grammes of caustic soda, and a slight excess of the sublimate in a litre of water. One hundred cubic centimetres of this solution contain 1.5 gram. of mercury. In order to test, add to the ammoniacal liquid a cubic centimetre of a 10 per cent. solution of sulphate of magnesia, and add an excess of the reagent. All the ammonia is precipitated; the precipitate is washed with alkaline water, dissolved upon the filter by a solution of hyposulphite of soda, and the amount of mercury in it obtained by means of a standard solution of sulphohydrate of soda. The original precipitate was *l'iodure de tétra mercur-ammonium*, with the formula $AzHg_4I$ and H_2O_2, and from this formula, with the known weight of mercury present, the amount of the ammonia can readily be obtained.—*Journal de Pharm. et de Chim.*, Sept. 1872.

Crystallized Digitaline.—Dr. Roucher asserts (*Les Mondes*, July 18) that the crystallized digitaline prepared by Nativelle is not a simple principle, but a complex body, and that its elementary analysis is incorrect.—*Chemical News.*

Detection of Spurious Kirschwasser.—According to Dr. Bonis (*Bulletin de la Soc. Chim. de Paris*, June 1, 1872), tincture of guaiacum strikes a deep blue color with genuine kirschwasser, but not with the spurious article. The coloration is said to be due to the presence of a trace of copper in the genuine kirschwasser, which metal always strikes a blue color with guaice in the presence of hydrocyanic acid.

Test for Phenol.—According to C. Mêne, when bromine is added in excess to a weak aqueous solution of phenol, there is formed a

yellowish white precipitate of tribromophenol. This reaction is so sensitive that one part of carbolic acid in 4,370 parts of water can be detected. In case of any doubt arising as to the nature of the precipitate, it is separated by filtration, washed, and put into a test-tube, gently heated along with some sodium amalgam; the liquid is then poured into a beaker-glass, and upon the addition of a few drops of dilute sulphuric acid, the characteristic smell of phenol is evolved, and the substance becomes visible in the form of drops.—*Chemical News*, July 12, 1872.

Analysis of the Empire Spring at Saratoga, N. Y.—By C. F. CHANDLER, PH.D., and F. A. CAIRNS, A.M.—One United States gallon of 231 cubic inches contains:

Chloride of Sodium	506.630 grains.
Chloride of Potassium	4.292 "
Bicarbonate of Magnesia	42.953 "
Bicarbonate of Lime	109.656 "
Bicarbonate of Lithia	2.080 "
Bicarbonate of Soda	9,022 "
Bicarbonate of Baryta	0.070 "
Bicarbonate of Strontia	a trace.
Bicarbonate of Iron	0.793 "
Bromide of Sodium	0.266 "
Iodide of Sodium	0.806 "
Sulphate of Potassa	2.769 "
Phosphate of Soda	0.023 "
Silica	1.458 "
Alumina	0.418 "
Fluoride of Calcium, Biborate of Soda, Organic Matter	each a trace.
Total	680.436 grains.
Carbonic Acid Gas	344.669 cubic in.

—*American Chemist.*

Cultivation of Opium.—According to the *Zeitschrift des Allgem. Oester. Apothek. Ver.*, of August 1, the question of the cultivation of opium in Würtemburg has been settled by the experience of Jobst, whose opium was raised with a fair profit, and has been found to contain by analysis 12.8 per cent. of morphia, 0.9 to 0.12 per cent. of codeia.

Benj. Lillard says, in the *Nashville Med'cal Journal* for October: A small quantity of the imported seed of the white poppy was planted by Dr. Pitts, in the spring of 1871, in Kentucky, and the seed thus obtained used exclusively this year with very fine success, the plant being larger and more vigorous, and the capsules from two to ten times as large as those from the imported seed.

A sample of the opium, prepared this summer, was found to possess the peculiar narcotic odor and bitter taste, and presents a smooth, tenacious mass of a dark brown color. One hundred grains, when dried, yielded eighty-three of powder, and, upon examination, eleven of insoluble matter, mostly clay and sand, and ten of alkaloids, equal to about nine grains of morphia.

New Method for detecting Arsenic for Pharmaceutical Purposes.—Pour on pure tin crystals, stannous chloride, 4–6 cc. pure chlorhydric acid of 1.12 sp. g., shake until solution takes place, and add carefully, 2–3 cc. of the sulphuric acid to be examined, gently agitating. In the presence of arsenic the solution assumes a yellowish, then a brownish, and finally a dark grayish-brown, troubled color. 1.500,000 of arsenious acid may be detected.—*American Chemist.*

Lactucarium and Thridacium.—The *French Lactucarium* is obtained by incising *Lactuca sativa* and collecting and drying the juice which exudes. *German Lactucarium* is obtained in the same manner from *Lactuca virosa*. *Thridacium* is made by expression from *Lactuca sativa*.

According to L. Bultin, these preparations differ as follows:

	Ashes.	Soluble in Alcohol.	Insoluble in Water.
German Lactucarium	10.63	46.00	48.83
French "	7.50	46.85	21.52
Thridacium	33.90	39.50	Entirely.

—*Zeitschrift Oester. Apothek. Verein.*

Cerisin.—According to the *Zeitschrift Oest. Apothek. Verein*, of August 20th, Jos. Faukal, of Vienna, has introduced a substance into commerce, under the name of cerisin, which bids fair to take the place of wax in pharmacy. It is in dazzling white sheets of some lines in thickness, or in small blocks of ½ to 1 pound weight. It has the consistency of wax, is odorless, and makes exceedingly beautiful preparations. It is offered at a much lower price than wax.

Koussin.—In the *Vierteljahrschrift für prakt. Pharm.*, of July 1, Dr. Karl Bedall has a long paper on *Koussin*. He has prepared it in quantities by a process similar to that by which santonine is obtained, and the experience of thirteen years has shown that it is the active principle of kousso. As he has got it, it is in the form of a yellowish-white powder, of a crystalline appearance under the microscope, but not really crystallized, slightly soluble in water, freely in alcohol, ether, and pure alkalies. He believes it to be of the nature of a resin, and gives its formula as $C_{26}H_{22}O_8$.

Against tape-worm he has found it very efficient.

He gives to an adult 40 grains, in from 2 to 4 powders, and the only evil effect he has ever seen is occasional nausea. No preparation of the patient, or especial dieting, is required.

Chinamia—A New Cinchona Alkaloid.—O. Hesse has found in the cultivated Indian bark of Cinchona succirubra an alkaloid which he believes to be new, and proposes to call *chinamia*. It crystallizes in long, fine, asbestos-like prisms, which contain no water of crystallization. It is moderately soluble in cold, very freely in hot ether, alcohol and benzole, very slightly so in dilute alcohol, not at all in water. Its solution in dilute acid exhibits no fluorescence. The platinum salt is a yellow amorphous precipitate, which can only form in concentrated solutions, as the double salt is, even at ordinary temperatures, fairly soluble in water; no less characteristic are its relations with the chloride of gold, for the latter forms in its solution a yellowish-white amorphous precipitate, which soon turns purple red, and the gold separates, whilst the solution is at first purplish-red, and becomes, on standing, brown. With the chloride of iron it gives no noteworthy reaction.—*Vierteljahrschrift für prakt. Pharm.*, July, 1872.

Preparation of Spirits from Lichens.—According to Dr. Arendt, in the Russian Provinces of Archangel, Pskow, etc., a spirit is prepared from lichens and mosses, by fermentation and distillation. This "moss-brandy" is said to be of fine flavor, and its preparation to yield a net profit of from 40 to 100 per cent.—*Chemical News*, September 6, 1872.

Boracic Acid as a Preservative.—According to A. Hirschberg, the addition of 15 grains of boracic acid to 2 lbs. of milk will keep it sweet in hot weather for five days. The usefulness of the milk is said not to be impaired, but the cream rises more slowly than normal.

Action of Oxidizing Agents on Brucine.—According to M. Luck, if there be added to a mixture of chlorate of potash and brucine, a few drops of sulphuric acid, a red color is produced, exactly similar to that evolved by the action of nitric acid on the same alkaloid; but, in the first place, a few drops of a solution of protochloride of tin decolorize the solution, whilst in the latter they change the tint to a deep violet.

M. Schome has found that chlorine water, ozonized water, chromic acid, chromate of potassa, and hypochlorate of soda (even in very weak solution), offer similar reactions.

Both authors believe that nitric acid reddens the brucia simply by oxidizing it.—*Journal de Pharmacie et de Chimie*, September, 1872.

Adulteration of Palm Oil.—G. Tissandier has shown that palm oil is often adulterated with water, even to as much as fifty per cent. Hager confirms this, but thinks that the water is added in the form of a boiling starch mucilage, with one per cent. of potash.—*Vierteljahr. für prakt. Pharm.*

On the Preservation of Aromatic Powders.—Reihl has shown that the oil obtained from some powdered cloves, which had been kept in a chest lined with zinc, contained a notable proportion of the metal, and therefore these aromatic powders should be kept in glass or porcelain.—*Ibid.*

Alkaloid of Chamomile.—Camboulises has examined the Roman chamomile to find the alkaloid and acid, which Pottone asserts that he has found in Anthemis arvensis, but without success. He asserts that there is no alkaloid in the Roman chamomile, and throws doubt upon the reputed discovery of Pottone.—*Ibid.*

Borate of Lime.—This salt is found native in the great pampa of Tamarugal in Peru. It exists in large quantities in the form of nodules, brownish exterior, but offering, when broken, a brilliant crystalline fracture. They are very slightly soluble in water, but dissolve freely in acids. The boracic acid in them is believed to be of volcanic origin. M. Thiercelin has found that the mineral contains from 16 to 18 per cent. of boracic acid.—*L'Union Pharmaceutique*, October, 1872.

A very Sensitive Test for Ammonia.—M. Lex has found that a trace of ammonia in a liquid can be recognized by treating the latter first with phenic acid, and then with chloride of calcium; if ammonia be present a green color will be developed.—*Ibid.*

Vanillic Acid.—In the October number of *L'Union Pharm.* M. P. Garles, of Bordeaux, has a paper upon the crystalline exudation of vanilla beans—vanillic acid. He finds that it is a true acid, making salts with lead, magnesia, zinc, alkalies, etc. On platinum it volatilizes without decomposition, but it is distilled with great difficulty. It is very soluble in cold ether, alcohol, chloroform, sulphide of carbon, fixed and volatile oils, very slightly soluble in cold, freely so in boiling water. Absolutely pure sulphuric acid renders it yellow; if a trace of nitric acid be present a scarlet color is induced; it produces a blue color with the persalts of iron; reduces the nitrate of silver and pre-

cipitates abundantly acetate of lead. By weak nitric acid it is very feebly attacked, by strong nitric acid it is rapidly changed into oxalic acid. It is isomeric with anisic, creasotic, and other similar acids.

Croton Chloral Hydrate.—The hydrate of croton chloral, according to E. Schering's latest communication, occurs in small, white, shiny, tubular crystals of peculiar odor, somewhat similar to that of blue-berries, and of a burning taste. Their formula is $C_4H_3Cl_3O$ and HO. They are soluble with difficulty in cold, easily in hot water, easily in alcohol and ether. By heating they melt and volatilize entirely, yielding exceedingly irritating vapors. Concentrated sulphuric acid deprives them of their water, converting them into pure croton chloral, which floats as a colorless, oily fluid upon the acid, which by warming is entirely destroyed with blackening and the development of muriatic acid. The purity of any sample is easily tested. It must melt at 78° C., fully disappear on heating, and make a clear solution in water and alcohol. The watery solution must be neutral in its reaction, by the addition of nitric acid and a salt of silver separate no chloride of silver, and on the addition of a caustic alkali or its carbonate yield an oily liquid insoluble in water (Allylendichlorid).—*Neues Repertor. für Pharm.*, Heft 5, Bd. xxi., 1872.

Java Cinchona Barks.—Julius Jobst gives the following analysis of Java barks, of which 104 seroons, of the aggregate weight of about 5,800 kilog., came into Amsterdam on the 14th of March:—

1. Cinchona Calisaya.

Quinia 1.10 per cent. = 1.49 of sulphate.

Quinoidine	0.48	per cent.
Conchinin	0.12	"
Cinchonia	0.33	"
Amorphous bases	1.36	"
Total	3.39	"

Cinchuria Hasskarliana.

Quinia 0.50 per cent. = 0.68 sulphate.

Quinoidine	0.81	per cent.
Conchinin	0.11	"
Cinchonia	0.68	"
Total	2.52	"

Cinchona officinalis.

Quinia 1.90 per cent. = 2.58 sulphate.

Quinidia	0.99	per cent.
Cinchonia	0.23	"
Amorphous bases	0.61	"
Total	3.73	"

Cinchona paludiana.

Quinia 0.13 per cent. = 0.18 sulphate.

Quinoidia	1.17	per cent.
Amorphous bases	0.77	"
Total	2.07	"

Cinchona succirubra yielded 3.5 per cent. of alkaloid, of which 1.7 per cent. were quinia, and a trace of cinchona.

—*Ibid.*, Heft 6.

Ammonia in Snow Water.—A. Vogel (*Neues Repert. für Pharmacie*, Bd. xxi. Heft 6) states that snow freshly fallen at a temperature of 15°–19° contains not a trace of ammonia, but snow which has lain on the field or housetop for some time contains it largely but in varying proportions. When the snow has fallen at a high temperature it contains some ammonia, even though fresh.

Argentine.—Dr. Geo. Martins details (*Bayer. Intelligenzblatt*, 18, Nr. 11) a case of poisoning by a preparation sold under the name of argentine for silvering copper, etc. An analysis showed that the liquid was a concentrated solution of cyanide of silver and cyanide of potassium.

Xylol.—According to Buchner the best method of exhibiting xylol is in gelatine capsules, which should contain from 3 to 12 drops.—*Neues Report. für Pharm.*

Apomorphine.—The latest method of manufacturing this alkaloid is by the process of E. L. Mayer (see *Berichte der Deutschen Chem. Gesellschaft zu Berlin*, 1871, iv., Nr. 2, S. 121), who produces it by treating morphia with a solution of chloride of zinc at 120° C.

The Preservation of Hydrocyanic Acid.—In the *Bulletin de la Société Chimique* M. Petit communicated the results of his experiments on the preservation of hydrocyanic acid when diluted to one-tenth and one-thousandth. The acid diluted to one-tenth alters very rapidly, while the acid of one-thousandth, free or combined, when examined after six months, had preserved almost exactly its original standard. Still further by diluting to one-thousandth the acid of one-tenth, which had already undergone a marked change, the decomposition was arrested. The presence of ammonia does not seem to induce this change. M. Gautier recalled to mind that in his own experiments, on very concentrated hydrocyanic acid, the presence of ammonia always hastened the decomposition. M. Fordos remarked that medicinal hydrocyanic acid apparently undergoes no change, that it does not become discolored; that, however, it disappears entirely after a certain time, this result being due, probably, to a simple evaporation, the flasks never being hermetically sealed.—*Medical and Surgical Reporter.*

Origin of Guano.—According to Habel, guano is not the excreta of birds, but a deposit formed on the spot by decaying protozoa. The substance is probably now forming near the Chincha Islands, as ships anchoring in the neighborhood continually bring up guano adhering to their anchors.—*Zeitschr. Oester. Apothek Verein*, Oct. 1, 1872.

Constitution of Tannic Acid.—Since the experiments of Strecker, it has been thought that tannic acid is a union of gallic acid and sugar. Schiff (*Berichte der Deutsche Chem. Gesell.*, iv. 231), has furnished proof that this is not correct. He found that gallic acid was changed by treatment with PCl_3O_2 in warmth into tannic acid, also in the same way by arsenious acid.

The formula expressing the change is $6(C_{14}H_6O_{10})$ [gallic acid] $+2(PCl_3O_2)=3(C_{28}H_{10}O_{18})$ [tannic acid] $+6HCl_2+PO_5$. That is, 1 equivalent of tannic acid and 2 equivalents of water equal 2 equivalents of gallic acid.

Thus $(C_{28}H_{10}O_{18})+2HO=2(C_{14}H_6O_{10})$.—*Ibid.*

TOXICOLOGY.

MORPHIA AND ATROPIA.

At a recent meeting of the Medical Society of the Dublin College of Physicians, Dr. J. M. Finny read a paper on a case illustrating the general physiological antagonism between atropia and morphia. The patient, a lady of nervous temperament, aged 25, was subject to neuralgia; and for this affection Dr. Finny had, on previous occasions, used a combination of atropia and morphia, with both anodyne and curative effects. When he was consulted by this lady, in October, 1871, he determined, as usual, to administer the drugs at the patient's ordinary hour of repose. Instead of the usual dose of one-fiftieth of a grain of sulphate of atropia, at least double that quantity was injected hypodermically, in combination with a fourth of a grain of acetate of morphia. In about twenty minutes Dr. Finny found the patient complaining of great cold, with the tongue dried, parched, and rough; dryness of the throat; speech thick and inarticulate; dimness of vision; scintillation; the pupils much dilated; pulse small and rapid, 130; respirations shallow, 32. Ten minutes afterward these symptoms had increased; there were great uneasiness and tossing about; delirium had also set in; the patient was grasping at imaginary objects in the air. Dr. Finny now resolved on using morphia as an antidote. With much difficulty, owing to the patient's perturbed state, he injected one-third of a grain of the acetate. In less than five minutes the restlessness and jactitation ceased, the skin became warm, respiration fell to 20, and the pulse came down below 100, and was fuller. In ten minutes from the time of the injection deep sleep had set in, and this continued through the night. Next day the lady had quite recovered, except for the still existent dilation of the pupils. The author then detailed the opinions of Dr. John Harley, Mr. Benjamin Bell, and others, on the subject of the antagonism between atropia and morphia, and of the toxical doses and effects of the former. Dr. MacSwiney said that at 3.30 P.M., on the 14th of last February, thirty minims of liquor atropiæ had been given to a man, aged 40, in mistake for the same quantity of Battley's solution of opium. At 4 P.M. an emetic, which had been administered, acted, and stimulant treatment was com-

menced. At 7 P.M. the man was quite insensible, anæsthetic, with eyes open and pupils enormously dilated; pulse very rapid and small; respiration slow; surface cold, and bathed in clammy perspiration. Thirty minims of liquor morphiæ hydrochloratis were now given, and the dose was repeated until three drachms in all of the solution had been taken. Consciousness returned at midnight, when the patient complained that he could not see. He recovered perfectly. Dr. Hayden reported a case of poisoning by belladonna-berries in a boy. The leading symptoms were vomiting, unmeaning laughter, and strange staggering gait. Dover's powder was given, and the patient recovered; but the pupils did not resume their normal appearance for two or three days. Dr. Hawtrey Benson, in November, 1869, treated a child aged 4, for toxical symptoms, consequent on eating belladonna-berries. The little patient was quite insensible, with jactitation and floccillation. The face was flushed, the pupils were dilated, and dysphagia and thirst were present. Control over the bladder, also, was lost. The treatment was by tincture of opium given in three-minim doses every second hour. This child completely recovered, having taken fifty-four minims of laudanum within thirty-six hours.—*Med. and Surg. Rep.*

THE LOGWOOD TEST FOR ALUM IN BREAD.

BY JOHN HORSLEY, F.C.S.

MR. DAVIS having, at the conclusion of his paper (*Chemical News*, vol. xxv., p. 207), invited chemists to give their experience on this subject, I yield to his request, inasmuch as, from having used logwood for several years past, I am in a position to speak of its being *perfectly reliable* if used precisely in the manner I am about to describe. I have on former occasions contributed papers to the *Chemical News* relative to the detection of alum in bread by the incineration process, but as such analyses occupy a much longer time than is required by law to give notice of proceeding against a baker for adulteration, I was necessitated to search for a short, and at the same time reliable, one. Knowing well that Mr. Hadow's system of using a decoction of logwood was *per se* of little or no value, as iron, copper, and other things produced a similar reaction, it occurred to me to use a tincture of logwood together with a saturated solution of carbonate of ammonia; and after making a variety of experiments with loaves purposely adulterated with different materials, I found that iron was the only substance that clashed with alum in its results, but that even these, when mixed, could easily be distinguished by proper procedure.

Feeling so thoroughly satisfied with this compound test, I placed it in the hands of the police, and with their assistance I surveyed the whole of the county of Gloucester twice, visiting the different bakers' and millers' establishments, and have therefore had some thousand of loaves pass through my hands, and succeeded in obtaining upward of 200 convictions which it would have been impossible to have done by the incineration process, forty-eight hours being the time allowed to take proceedings in.

At Dr. Carter Moffat's request, I sent him a sample of this alumized flour, and was surprised afterward to find him stating in his lecture at Glasgow that alum and logwood gave a *dark red*, hence my letter in the *Chemical News* of September 15, 1871 (vol. xxiv., p. 131), which Mr. Davis now alludes to. I therefore distinctly state, that bread containing alum will, in every case, on being treated with logwood in solution, ultimately go blue, it being merely a question of time, although it may take a straw-colored tinge at first; in conjunction, however, with carbonate of ammonia, the blue color is more rapidly promoted, which is the beauty of that combination.

As my process was explained and published in the newspapers at the time, perhaps Mr. Davis and others may not have seen it. I therefore now describe it in full:

1. Make a tincture of logwood by digesting for eight hours two drachms of freshly-cut logwood chips in five ozs. of methylated spirit in a wide-mouthed phial, and filter.

2. Make a saturated solution of carbonate of ammonia in distilled water.

A teaspoonful of each solution, mixed with a wine-glassful of water in a white-ware dish, forms a pink-colored liquid. Bread containing alum, immersed in it for five minutes or so, and stood upon a plate to drain, will in an hour or two go blue on drying; but, if no alum is present, the pink color fades away. If, on drying, a greenish tinge appears, that is an indication of copper, as carbonate of ammonia produces that color, but never a blue.

As a counter-check for iron, a piece of the moist blue-colored bread may be drenched with a few drops of glacial acetic acid, when that containing iron is bleached of a dirty white color, but with alum a rose-pink or slight buff color will be observed.

Or it may be tried another way, thus:—Take a piece of the bread in its plain state, and having digested it in dilute acetic acid for an hour or so, press out the liquor and filter; then put in a lump of carbonate of ammonia, and, when all effervescence ceases, add to the clear liquor a few drops of solution of sulphide of potassium or sodium. If iron be present it will be indicated by a dark color, there being no

color produced with alum; but the addition of a little tincture of logwood immediately reveals it.

I might even go further, and say, that if necessary, you may quantitatively estimate the alumina thus: Take, say, ¼ lb. of crumb bread, digest it in a clean basin with some dilute acetic acid, and allow it to stand a few hours; then break up the mass and pass the liquid through a glass percolator, the rim being covered with calico, repeating the percolation two or three times till the liquor is clear. Throw in a lump of carbonate of ammonia to saturation, and add tincture of logwood in excess, when, if alum be present, a dark blue color will be produced, with a flocculent blue precipitate on standing awhile. Collect this precipitate on a filter, wash it off into a dish with dilute nitric acid, and evaporate the red liquor to dryness. Collect the residue in a small Berlin crucible and ignite it at a red heat, when a white powder will be obtained consisting of alumina, with possibly a little lime; treat this with liquor potassæ, to dissolve out the alumina, mix with a little water, filter, and boil with carbonate of ammonia to obtain the pure alumina.—*Chemical News.*

A CASE OF NITRO-GLYCERINE POISONING.

BY DR. J. C. HOLST.

A MAN thirty years old drank by mistake some impure nitro-glycerine, and directly afterward took milk and water, and at once sought medical aid. The symptoms were not very marked, and consisted in slight sense of pressure on the chest, a somewhat excited pulse, and hurried breathing; there was also some giddiness. After the exhibition of an emetic the patient vomited a liquid smelling strongly of nitro-glycerine. Afterward the respiration became very fast, 100 a minute; the pulse 96, otherwise normal; a sense of weight in the pit of the stomach was complained of, as well as a feeling of uneasiness; consciousness was not disturbed save for an instant; no pain was present nor thirst, nor were there any mucous râles in the lungs. Leeches were placed upon the temples and præcordia. About five hours after the ingestion of the poison, vomiting and diarrhœa came on; the latter was painful and lasted uninterruptedly for an hour. The vomit smelt of nitro-glycerine. The stools were first greenish, afterward whitish, with a trace of nitro-glycerine.

Afterward the feelings were better, the intense abdominal pain disappeared, but headache was complained of. The breathing was less hurried, but very superficial, yet after every two or three respirations

would come a deeper one. The man laid as though quietly asleep, but the stupor and cyanosis grew more and more profound, and the patient died quietly seven hours after the taking of the poison.

Five hours after death the rigidity was marked. Congestion of the membranes and outer brain substance, and of the lungs, were found at the post-mortem. The tracheal mucous membrane was reddish brown. The left ventricle contained fluid blood; the right was empty. The mucous membrane of the stomach was reddish brown, much swollen and somewhat ecchymosed. The intestines were normal.—*Norsk. Mag.*, xxiv., 1870, and *Schmidt's Jahrb.*, August, 1872.

A NEW TEST FOR ARSENIC.

BETTENDORFF has simplified Hager's method of testing for this substance, and, it would seem, has rendered it peculiarly suitable for testing pharmaceutical preparations for slight impurities from this element.

The method of testing commercial sulphuric acid for traces of arsenic will give a fair illustration of the author's process.

A small quantity of protochloride of tin, in a shallow dish, is covered with pure hydrochloric acid (1.12 sp. gr.) until it is dissolved. To this is added, drop by drop, the sulphuric acid to be treated, the vessel being agitated at each addition. This addition will cause considerable heating, and if no arsenic be present the liquid will remain clear. If the arsenic be present in the smallest quantities, the liquid will be colored first yellow, then brown, and finally a dark grayish-brown, becoming at the same time turbid.

The process, while far more readily carried out than Marsh's, is declared to be nearly equal to it in delicacy.—*Journal Franklin Institute.*

Trichinæ.—The Prussian Government publicly calls attention to the presence of trichinæ in hams imported *via* Bremen from the United States, warning purchasers to abstain from them, and threatening the sellers with criminal proceedings.—*Med. and Surg. Reporter.*

DEATH AFTER TAKING HYDRATE OF CHLORAL.

F. JOLLY (*Bayer. Ærztl. Intell.-Blatt*, 1872, Nos. 13 and 14) states that in the course of two years, during which he has employed hydrate

of chloral in the treatment of the insane, he had met with two cases of sudden death following its use. The dose was in each case below the average, and the chloral was chemically pure. The patients during life presented no contra-indications to the use of the remedy. One had taken the chloral at night for four evenings in succession; on the fifth evening, after taking it, the respiration and circulation at once ceased. The necropsy showed anæmia of the brain, acute œdema of the lungs, hyperæmia of the abdominal organs, a perfectly healthy heart and vessels, and dark fluid blood. In the other case, chloral had been given twelve days in succession, with the effect of producing sleep after a short stage of excitement. On the thirteenth day the patient died, after some stertorous breathing, a quarter of an hour after the dose. There was here found moderate œdema of the lungs; the blood was fluid, but normally distributed; the heart was large and flabby, and its muscular structure was pale, but not friable.—*Med. and Surg. Reporter.*

DEATH FROM THE STING OF A BEE.

On the 19th of July, a female, age fifty-five, was stung by a bee behind the ear. Shortly afterwards she became unconscious, and died before the doctor who was sent for arrived. The brother of the deceased stated at the inquest that she was of a delicate and nervous constitution. In the autumn of 1870 she was stung by a bee, and the consequences were very peculiar. She became unconscious, and remained in that state for two hours. Beck, in his work on Medical Jurisprudence, quotes a case where a sting on the back of the finger was quickly followed by "vomiting, sweating, trembling, and great difficulty of breathing."

Dr. Tanner quotes a case from the *American Journal of the Medical Sciences*, of a man who suffered very seriously in the month of August, 1819, from the single sting of a bee, and who being stung a second time (on the temple) in the following year, died from the effects thereof within ten minutes. Two or three other cases of fatal result are quoted by the same author, but happily such an occurrence is exceedingly rare. The advice given by the coroner, Dr. Diplock, to "give stimulants freely" in such cases, is undoubtedly founded on sound principles, the immediate cause of death being apparently failure of the heart's action.—*Lancet*, July 27, 1872.

POISONING BY ACETATE OF BARYTA.

In *L' Union Médicale* of October 5, Dr. Lagarde describes the case of a man for whom he had ordered a dose of sulphovinate of soda, but to whom was administered, by mistake, acetate of baryta, in the quantity of between two and three drachms. When summoned to his patient he found him very pale; voluntary motion was almost completely abolished, with nearly suppressed voice, cold, very wet skin, irregular and feeble respiration, almost without murmur, and a feeble, small pulse of 125 to 130 per minute. The tongue was a little blackish, but preserved its movements; there had been efforts at vomiting, and there was nausea; the urine was clear and abundant; the stools involuntary; the pupils normal; the face anxious and the mind clear to the close.

In spite of treatment the man died of gradual asphyxia from paralysis of the respiratory muscles, without having moved in the slightest from the position in which the doctor found him. At the autopsy nothing definite was found, unless it were a dark fluid state of the blood.

Before the fact of poisoning was recognized, the doctor tasted the remainder of the potion freely.

Three or four hours afterward he was seized with an intense general feebleness, with disagreeable feelings of formication, etc., under the skin, especially of the face. After about two hours he had marked borborygmus and a semi-liquid stool. About an hour after this the weakness had so increased that he could scarcely raise his hand to his head. His pulse was 65 (5 below normal), the skin cold, the general sensibility intact, but the peculiar pricklings about the head were increased.

About seven hours after the ingestion of the poison he had some nausea, followed by very copious vomiting. At the eighth hour there was complete paralysis of the left forearm, and at the ninth hour almost as complete relaxation of all four members as possible, and he had again some vomiting, a semblance of which indeed occurred nearly every hour during the night. From this time the paralysis rapidly gained upon all the muscles, and finally respiration became very much affected. The doctor was unable to cough, to articulate a word of more than two syllables, and at last the sphincters became involved, and involuntary passages occurred. The pulse fell to 56, but fortunately only for a short time was irregular. The temperature was lowered, but intelligence and consciousness were not affected. The paralysis persisted for twenty-four hours, and then gradually disappeared, voluntary motion returning first in those extremities in which it had first disappeared.

There was not at any time abdominal pain, but for forty-eight hours there was intense thirst. For the same period of time after recovering, the urine contained a large amount of mucus in it, but an analysis failed to detect baryta on the thorax. There was an eruption of acne, which disappeared after some days.

THE CHEMICAL CHARACTERS BY WHICH THE MEDICO-LEGAL EXPERTS CAN RECOGNIZE DIGITALINE.

In *L' Union Médicale* for August 22, 1872, Messrs. E. & G. Homolle, after quoting the opinion of Tardieu, that it is not possible to find digitaline in cases of poisoning, affirm that they think it can be done. The first step should be to purify the matters to be examined by maceration, first in strong alcohol (95 per cent.), afterward in chloroform, the remaining steps being confined to the substances dissolved out by these menstrua. The presence of a bitter taste is of some import, but no attempt should be made to recover the digitaline in substance, as its physical characters are not distinctive, and much of it is necessarily lost during the requisite process.

The absence of a precipitate with the chloride of platinum, shows that no alkaloid is present in the bitter liquids. The emerald green color produced by contact with concentrated pure hydrochloric acid is distinctive. It has been objected that the same color is produced by bile and chlorophyll. We have, however, tested a vegetable extract to which digitaline had been added, and got the color; then tested another portion of the same extract without the addition of the digitaline, and failed to develop the color.

If pure beef bile be treated with alcohol 15 per cent., the liquid agitated with hydrated oxide of lead, filtered, and evaporated to an extract, this treated with chloroform, and the solution allowed to evaporate, the residue does not turn green with hydrochloric acid.

The best method of performing the testing for digitaline is as follows: A portion of the product obtained for testing is put in a small capsule of porcelain, and to it are added, by means of a glass rod, two or three drops of the strong acid, and the mixture slightly heated. The green color rapidly develops, but, when there is only a small portion of the digitaline, does not persist more than 24 hours. When the expert desires to preserve the color, he may do so by dissolving the green matter in a drop of chloroform. When this evaporates, a permanent green is left.

The reactions produced with iodine, bromine, and chlorine are very characteristic, but require a considerable amount of the digitaline. These tests should be applied in the following order:

1st. Intense bitter taste.

2d. Hydrochloric acid.

3d. If the quantity be sufficient the sulphuric acid, tannic acid, the chlorine and bromine tests, may be used.

The hydrochloric acid test with digitaline we believe to be infallible.

In a doubtful case of poisoning, the method of Stas should be employed to discover the alkaloids, etc., with the bulk of the matters vomited, stomach contents, etc. A moiety of the material should be preserved for the looking-for of digitaline. If the symptoms have been very significant of poisoning with the latter substance, the bulk of the material should be examined for it. The process should be conducted as follows: The material should be filtered. The liquid portion should be triturated with fresh hydrated oxide of lead (1 to 20 by weight); then to it should be added its volume of alcohol of 95 per cent., filtered and evaporated at a low temperature; when, during evaporation, albuminous or fatty flakes form, they should be separated by passing through a filter previously moistened with distilled water. When the liquid has become of a syrupy consistence, it should be put into a test-glass and agitated with less than its volume of chloroform, which should afterwards be separated by a pipette. This may be repeated several times, and the chloroform be allowed to evaporate in a porcelain capsule. If fatty matters appear to be present in the residue, they should be removed by benzine, which does not dissolve at all the digitaline.

The solid material remaining on the original filter, and the viscera cut fine, should be treated as follows: Its weight of alcohol (at 95 per cent.) should be added to the mass. After many hours of contact, the liquid is to be decanted and replaced by fresh alcohol; this is repeated three times. The alcoholic products are then united, agitated with hydrate of lead, filtered and evaporated at a low temperture (never above 40° C.). The residue, of the consistence of honey, must be carefully washed with benzine, and then treated with alcohol of 95 per cent., which leaves much of it behind. The solution thus obtained is to be evaporated as before to a syrupy consistence, and then shaken in a test-glass with chloroform, from which an extract is obtained, as in the examination of the liquid contents. This extract should be washed with very pure ether and distilled water.

The reasons for the various steps of this process are discussed by the authors, but are sufficiently obvious.

Lightning Stroke.—In the *London Lancet* of July 20th, Drs. Clarke and Brigham detail two cases of stroke from one bolt. The

woman escaped with a temporary paralysis of one arm and a permanent drying of the milk in the breast of the same side. The old man died after about forty-eight hours. At the post-mortem the skull was found fractured, a small irregular triangular piece being blackened and loosened. A large quantity of thick fluid blood was found beneath the torn membranes, and the substance of the right hemisphere was very much softened. Rigor mortis came on very slowly.

Death from a Grain of Morphia.—In the *London Lancet* of July 6th, is detailed the case of a lady who died twelve hours after the ingestion of a grain of morphia. She was suffering from large abdominal tumors and dropsy.

Recognition of Phosphorus Poisoning.—M. Poulet stated before the French Academy of Science that phosphorus is always eliminated in the urine, when taken internally, in the form of hypophosphoric acid, and that taking advantage of this, the existence of phosphorus poisoning can be readily recognized or disproved. To discover hypophosphoric acid in the urine, nitric acid should be added to it, and the whole heated to calcination. If the acid be present, as dryness is reached the mixture suddenly bursts into flame like a packet of matches.—*Gazette Médicale de Paris*, August 17, 1872.

Murder by a Needle.—An extremely interesting medico-legal case is reported from Limberg. The wife of the attendant at the anatomical cabinet died suddenly and without visible sign of disease or injury. This led to a post-mortem, which at first revealed no cause of death. A closer examination, however, discovered an almost imperceptible red point in the region of the heart, resembling the bite of a flea. This region was of course at once examined to disclose a broken needle in the heart.

The murderer, thoroughly familiar with the anatomy of the body, had doubtless sacrificed his victim during sleep. The anatomical servant was at once arrested.—*The Clinic.*

Death from Quinoidine.—By C. Meymott Sidy.—A laboring man by mistake took a concentrated ague mixture, containing some 170 grains of quinoidine. Immediately he was taken with excessive vomiting, and died in about half an hour. At the post-mortem, the brain was found intensely congested. The right pleura was found adherent. The lungs were in the first stage of pneumonia. The heart showed signs of fatty degeneraton. The stomach was intensely congested, with patches of deeper congestion.—*London Lancet*, July 13, 1872.

Arsenic in Lamp Shades.—A German doctor has described two cases in Jena, and one in Frankfort, where persons using green glazed paper-shades were attacked with symptoms of arsenic poisoning. In no case did the symptoms cease until the use of the shade was discontinued. The heat of the lamp volatilizing the arsenic, renders the small quantity present very dangerous.—*Med. and Surg. Reporter.*

Death from Bichloride of Methylene.—A man aged 51 was about to be operated on by Mr. Gore, at the Bath United Hospital, for the reduction of a dislocation. The bichloride of methylene was given, and the patient became insensible in two or three minutes, but his face then became livid and his breathing suspended. The pulse was at the same time observed to fail. The tongue was drawn forward, ammonia was given, and the galvanic battery was used for three-quarters of an hour, but without effect. The heart was found to be large and flabby, but there was no other sign of disease in the organ. At the inquest Mr. Gore said that bichloride of methylene had been used there two hundred and fifty times in the last two years. —*Brit. Med. Journ.*, Aug. 31, 1872.

Poisonous Ink.—According to the *Zeitschrift Oester. Apothek. Vereins*, of Aug. 1st, there has appeared in the German market an ink made of the nuts of anacardia. In several cases gloves were colored with this ink, and the result was a pustular eruption upon the hands, which speedily disappeared, to be followed by an intense inflammation of the skin, confined to the arm or spreading almost all over the body.

Poison by Stramonium.—Dr. A. W. Rogers was called to see a little girl, three years of age, in a state of wild delirium. It was with great difficulty that the mother could hold her on her lap. She would forcibly throw out her legs and stiffen them, and at the same time throw them wide apart from each other. The arms were being constantly thrown out, as if trying to reach and get hold of something; and sometimes it seemed as if some object had been secured, and was for a moment fumbled in the fingers. The pupils were dilated, and the eye looked wild. The cry was a kind of scream; a little froth was seen in the mouth; the surface of the skin was hot; the restlessness was very great.

Under the influence of an emetic she soon vomited matters containing the seeds of the stramonium, many plants of which grew near the house. Afterwards a dose of castor-oil was given, and more of the seeds were passed from the bowels.

The symptoms continued through the night, and, in an abated form, part of the next day. The mouth and throat were very dry, and the saliva very viscid, but by the next evening these, with the other symptoms, so much lessened that the child slept some, and the next day but one after the poisoning was pretty well.—*Med. and Surg. Reporter.*

Antidote for Carbolic Acid.—Th. Husemann has investigated (*N. Jahrb. für Pharm.*) this subject, and arrived at the following conclusions: Fatty oils, glycerine, and other similar demulcent materials, do not weaken the action of the poison. Of glycerine it was observed that it was itself poisonous to frogs.

Alkalies and other alkaline earths, especially when used in great excess in solution, acted more favorably. The best antidote was made by dissolving 16 parts of sugar in 40 parts of water, and adding 5 parts of chalk, previously calcined and mixed with a little water, digesting for three days, with frequent agitation, filtering, and evaporating the filtrate to dryness. The resulting "sugar-chalk" is freely soluble in water, and is the best known antidote to carbolic acid.—*Vierteljahrschrift für prakt. Pharm.*, July, 1872.

Hair Tonics.—In the *Vierteljahrschrift für prakt. Pharm.* is an analysis by Wittstein of two hair restorers, the labels of which claim that they are harmless. Both Mrs. L. A. Allen's World Hair Restorer and the Hair Restorer of Dr. Brabender contain a large per cent. of lead.

Poisoning by Chloral Hydrate and Morphia.—In *Schmidt's Jahrbücher* of May 16, 1872, is detailed a case in which a patient took, inside of 12 hours, 8 grammes of chloral hydrate and .06 grammes of morphia, and recovered.

Poisoning by Gloriosa Superba.—The Gloriosa superba is a handsome climbing plant of the family Tilliaceæ, growing in India, where its root is much used for poisoning. Dr. Hein Chunder Bhisttacharjee details a case in the *Indian Medical Gazette* of July 1. The symptoms came on suddenly half an hour after administration, and death took place 3½ hours afterwards. There was sudden retching, with violent vomiting; spasms, contortions, and racking pains over the whole body; short intervals of relief, with return of the symptoms in constantly increasing violence.

At the autopsy the brain and its membranes were highly congested; also lungs, liver, and kidney. The spleen was pulpy, extravasated with blood. The mucous membrane of the stomach and bowels highly inflamed.

Poisoning by Chloroform; by Arsenic.—Dr. Poorna Chunder Banerjee details (*Indian Medical Gazette*, Aug. 1) the case of a man who swallowed, with suicidal intent, an ounce of chloroform, and was not seen for four hours afterwards, but recovered under the use of emetics and other proper remedies.

In the same journal, Dr. E. D. Mackenzie gives an account of a man who took large lumps of arsenic, and received no treatment for sixteen hours. He had severe symptoms developed about 18 hours after the ingestion of the poison, but finally passed from the rectum the two lumps of arsenic, weighing together 105 grains. The treatment consisted mainly in the free use of the hydrated sesquioxide of iron and castor-oil.

Musculus Venosus.—Dr. Francis Crumpe states, in the *Dublin Journal of Medical Sciences* for October, that in a dock near the town of Tralee, Ireland, there is a mussel very similar to Musculus edibilis, but many times larger, which, instead of being edible, is a deadly poison. They induce both in man and animals a state of collapse with intense loss of muscular power, without marked acceleration of pulse (unless towards death). On a post-mortem examination of a fatal case the stomach and intestines were found immensely distended with gas. A number of experiments are detailed. Almost the only symptom was motor paralysis.

Led by this, Dr. Crumpe treated a case of traumatic tetanus with three of the raw mussels, and in three hours the symptoms were markedly alleviated. There was no relapse, and the woman recovered.

Death from Ether.—Dr. W. B. Dunning, Acting House Surgeon, at the Bellevue Hospital, New York, reports (*Medical Record*, Oct. 1, 1872) the case of J. S., a saddler, aged 68, who was admitted into the hospital on August 2, 1872, suffering from a fracture of the left femur, just below the trochanter. The administration of the anæsthetic was slowly and carefully made, and after perhaps ten minutes the patient was fully under its influence and the operation begun. A few turns of the plaster had been made, when the patient's breathing was observed to be rather frequent and gasping. The pulse was, however, full and regular. The thorax was compressed two or three times, and the patient's breathing again became normal. As these symptoms not rarely occur during etherization, they excited no special alarm. The ether was, however, withheld from the patient four or five minutes, his respiration and pulse being normal. As he then began, however, to move about, and his muscles were becoming rigid, the ether cone was again applied. In a minute or two, the assistant, who was giving

the ether, observed the pupils to be dilating rapidly and the breathing to cease. His heart was still beating, however. The ether cone was of course immediately removed and artificial respiration was again used, and all the batteries obtainable in the hospital were put in operation in an effort to resuscitate the patient. His muscles occasionally responded by a spasmodic movement, but no breathing again occurred. The efforts at resuscitation were continued about forty minutes, until all response to the action of the battery had ceased.

Autopsy was made three hours after death. Rigor mortis was marked. Blood was fluid. Heart contained a little fluid blood, with a little atheroma at base of aortic valves. The lower lobe of right lung was œdematous, and its lower portion in a state of red hepatization. The ether was pure, and about 6 ounces were employed.

Poisoning by Aconite.—Miss C. D., æt. 65, weight about two hundred and eighty pounds, took by mistake f ℥ i. of tinc. aconite root, at seven o'clock P.M. A quarter of an hour afterwards she drank freely of milk and eggs. At about twenty minutes past eight a physician arrived and caused her to vomit freely. There was great numbness in all the extremities, and in an hour or two a terrible choking sensation. Pulse irregular, and sixty per minute. At 10.45 P.M. her pulse was imperceptible, and she was in a very profuse cold perspiration; there were slight convulsions. Her surface felt like that of a dead person. At 11.15 P.M. she was apparently dead, so far as respiration or circulation could be discerned; yet she kept some part of the body moving, and in less than an hour began to rally. By midnight her pulse was perceptible; she continued to improve, and by nine o'clock next morning she was recovered.

Stimulants (brandy) and external heat constituted the treatment.—G. Cox, M.D., *Philadelphia Med. Times*, Nov. 2.

PRESCRIPTIONS AND FORMULAS.

Aromatic Tincture of Arnica.

BY DR. DELIOUX DE SAVIGNAC.

Take of

Bruised bay-berries	15	grammes.
Flowers of arnica	25	"
" of lavender	10	"
" of chamomile	10	"
Leaves and tops of thyme	10	"
" " pepperm't	10	"
" " sage	10	"
" " balm	10	"
Brandy (proof spirits)	1	litre.

Macerate for five hours, express strongly, and filter.

The quantities are for dried herbs. If the latter be used fresh, double the quantity must be employed, and alcohol at 90° must be substituted for the spirit.

This preparation is very useful in all forms of chronic muscular pain, whether rheumatic, from sprain, fatigue, age, or other causes. It should be used with continuous frictions with a piece of flannel or a woollen glove.

Sometimes the remedy is made more efficient by the addition of 5 to 10 parts of camphor to the 100. It may be used internally in doses of 2 to 4 teaspoonfuls given unsweetened, in cases of shock from wounds, or wherever a simple cordial and stimulant is needed. A simpler but less elegant and efficient preparation may be made domestically by taking 15 grammes each of dried chamomile, lavender, thyme, mint, sage, and balm, and adding 1 litre of ordinary spirit to them. The above formula, however, produces in the hands of a good pharmacien a much better preparation.—*L'Union Pharmaceutique*, September, 1872.

Vermifuge Powder.

The following, by Bouchut, is recommended especially for lumbricoid worms, in *L'Union Médicale* for September 28, 1872:

Take of Calomel	2	grs.
Santonine	1.5	grs.
Powdered sugar of milk	1.5	grs.

Mix. Give before breakfast in a tablespoonful of honey, to a child about two years old.

To Get Rid of Body-lice.

Dr. W. T. Carter recommends the following in the *American Practitioner* for October, 1872.

℞ Corrosive sublimate	gr.	xij.
Alcohol	ʒ	iv.
Oil of bergamot	♏	vj.
Mix and add water	ʒ	iijss.

This solution should be thoroughly applied to every part of the body infested, taking care that every insect is reached by it. The first application will, in the majority of cases, cause the death of every accessible louse; but it should be continued twice daily for at least one week, in order that none may escape. It will generally be found necessary, where lice have set up an eczema of the scalp, to cut the hair short, in order to expose every retreat of the insect; and even where alcohol or dilute acetic acid, as recommended by Hebra, are used to destroy the nits, I have found the cure greatly expedited if the solution of the bichloride be employed in conjunction with the above agents. When the pubis is the part affected, the solution should be briskly rubbed in upon the scrotum, perineum, pubes, and about the anus. If

body-lice are present, the clothes should either be destroyed, or be boiled or exposed to a temperature of 150° F. Such lesions as may remain after the destruction of the vermin are to be treated according to their character.

Syrup of Eucalyptus.

Take of Distilled water of eucalyptus.....500 parts.
White sugar.....950 "

Dissolve and filter.—*L'Union Pharmaceutique.*

Tincture of Eucalyptus.

Take of Dried leaves of eucalyptus (cut up).....1 part.
Alcohol, at 80°.....5 "

Allow to macerate for ten days, then filter.—*Ibid.*

Wine of Eucalyptus.

Take of Dried leaves of eucalyptus..... 30 parts.
Alcohol at 60°..... 60 "
Good white wine...1,000 "

Allow to macerate in the alcohol for twenty-four hours, then add the wine; after ten days, filter.—*Ibid.*

Hydro-Alcoholic Extract of Eucalyptus.

Take of Dried eucalyptus leaves (cut up). 1,000 parts.
Water.....,.. 3,000 "

Distil to obtain the essential oil; make an aqueous extract of the material remaining in the apparatus, and to it add alcohol at 60°, 1,000 parts.

Filter the alcoholic solution and evaporate it to the consistency of an extract; when nearly cold, mix the volatile oil thoroughly with it.—*Ibid.*

Ointment for Tinea.

Dr. Robinson suggested a prescription in the treatment of tinea capitis and eczema, which he has used with much success.

℞ Liquid tar..... ʒ i.
Oint. nit. mercury..... ʒ ij.

Mix.

S. Apply in thin plaster every third day. Dr. Robinson gives Fowler's solution for a while after the local trouble is relieved.—*Proceedings Kentucky Med. Soc.* 1872.

Syrup of the Lacto-Phosphate of Lime.

For this the *Chemist and Druggist* gives this formula:

℞ Concentrated lactic acid....f. ʒ i.
Magma of freshly precipitated phosphate of lime, as much as will dissolve.
Orange-flower water.....f. ʒ iss.
Water up to.....f. ʒ viii.
White sugar..... ʒ xi.

Mix the lactic acid with two ounces of water, and saturate it with the magma. Put the liquid upon a filter, and add the rest of the water until eight fluid ounces of filtrate are obtained. Pour this upon the sugar contained in a bottle; shake occasionally until solution is effected, and strain. No heat ought to be applied, else the syrup assumes a milky appearance. The syrup thus prepared contains between two and three grains of dry phosphate of lime in each fluid drachm, besides the lactic acid.

Revulsive Liniment.

Take of Oil of turpentine..... 30 parts.
Tartar emetic..... 4 "

Mix.

Frictions are to be practised three or four times a day, until an eruption is provoked

Useful in chronic rheumatism.—*Revue de Thérap. Med.-Chir.*

Formula for Headache Following Alcoholic Debauch.

WRIGHT'S.

Take of Solution of acetate of ammonia, tincture of bitter orange-peel, syrup of bitter orange-peel, āā .... 20 parts.
Water.....500 "

M.

S. To be given in repeated tablespoonful doses.—*Revue de Thérap. Méd.-Chir.*

Collyria.

Dr. Delioux de Savignac claims (*Bulletin de Therapeut.*) that lavender water is very superior for use as a vehicle for collyria, and gives the following formula:

Astringent Collyrium.

Take of Crystallized alum... 0.3 parts.
Distilled water of lavender..... 100 "
Mix, and filter carefully.

Detersive Collyrium.

Take of Borax..... 1 to 2 parts.
Distilled water of lavender..... 100 "
Mix.

This collyrium is often more efficacious in painful ophthalmia than the astringent preparations. When the pain is excessive, from 1 to 2 parts of laudanum should be added to it.

Cataplasms of Iodide of Starch.

Take of Starch.....12 parts.
Boiling Water.... 6 "
Mix, and add whilst still hot:
Tincture of Iodine. ½ part.

When cool forms a jelly, which is often exceedingly beneficial as a local dressing in foul, ill-conditioned ulcers.—*Revue de Thérap.*, Sept. 15, 1872.

Calabar Beans for Constipation.

Calabar beans have, until lately, been but little used, except for contracting the pupil of the eye, and by Dr. Ogle in chorea. Dr. Victor Subbotin, in the *Deutsch. Archiv. Klin. Med.*, proposes Calabar beans for atony of the bowels, observing that it has been found by Bauer, and confirmed by A. V. Bezold and others, that this drug produces a cramp-like condition in organs that are supplied with involuntary muscular fibres.

He uses the preparation in the following form:

℞ Ext. sem. physostig. ven., grs. iv.
Glycerin..... ʒ ij.

Solve. Sig. Four times a day, four drops.

He first administered this solution to a female who was much constipated from atony of the bowels. After the patient had used this preparation twice, a swelling in the abdomen, caused by fæcal matter, disappeared permanently, and the patient was cured. Her constipation had, however, once already disappeared temporarily by the use of aloes and rhubarb. Dr. Subbotin has since treated two cases of atony of the bowels and one case of chronic bronchial catarrh (atonic state of the bronchial walls) most successfully with the Calabar beans.—*Medical and Surg. Reporter*, Sept. 28, 1872.

Antiscorbutic Gargle.

Take Decoction of yellow bark.150 parts.
Tincture of myrrh..... 8 "
Alcoholate of scurvy-grass. 8 "
Syrup of mulberries..... 40 "
Mix.

To be used as a mouth-wash and gargle in scurvy.—*Revue de Thérap. Méd-Chirurg.*

Anti-Neuralgic Pills.

Take of Valerianate of zinc..0.30 centigr.
Ext. of hyoscyam..0.15 "
Ext. of opium.....0.09 "
Conserve of roses q.s. to make 6 pills.

Give two or three, at intervals of three hours, and renew the same medication on the second day for trifacial neuralgia.—*L'Union Méd.*

Detersive Gargle.

Take of Decoction of cinchona.150 grms.
Honey of roses..... 30 "
Chlorhydric acid...20 to 30 grs.
Mix.

Employed in gangrenous angina.
—*L'Union Méd.*

[It should be remembered that acid

gargles, as well as those containing alum or tincture of the chloride of iron, are very destructive to the teeth.—Ed. N.R.]

Calvo's Depurative and Sudorific Syrup.

Guaiac and china-root..āā 250 grammes.
Sassafras..... ..... 60 "
Sarsaparilla ..... 500 "

Boil with sufficient water in a close vessel.

Add to this decoction:

Lobelia syphilitica.....250 grammes.
Flowers of borage..... 62 "

Infuse for 12 hours.

And add:

White sugar.....5,000 grammes.

Dose, 50 to 100 grammes daily.

—*L' Union Méd.*

Treatment of Gonorrhœa by Tanno-Glycerine Paste.

Dr. Tomowitz, K. K. Regiments Arzt, Austrian army, reports the successful employment of a modified Schuster's (Aix-la-Chapelle) tanno-glycerine paste for syphilis and gonorrhœa. His formula is as follows:

℞ Acidi tannici..... ʒ ss.
Opii pulveris..... gr. iv.
Glycerinæ.....q. s. ut ft. pasta.

Some 50–60 drops of glycerine are requisite to bring the paste to a proper consistency. A sound or elastic bougie is dipped into the paste warmed over a stove or spirit-lamp, and thus smeared is introduced into the orificium penis to the fossa navicularis, where it is held for five minutes. This operation is repeated three times a day. In gleet the catheter or bougie is carried back to the bladder and slowly withdrawn, so as to bring the paste into contact with every surface of the urethra. Even in acute cases the pain is but very slight.—*Allg. Militaraztl. Zeit.*, Aug. 11, 1872; *The Clinic.*

Glycerole of Assafœtida.

BY ALONZO ROBBINS.

℞ Assafœtida..... ℥ ij.
Glycerine, q. s. ad.....f. ℥ viij.

Select the best assafœtida and cut it quite fine; put it into an eight-ounce bottle, and add five fluid ounces of glycerine; cork well and suspend in a can of water, which place on the stove where the heat will be very moderate; let it remain so a day or two, shaking the bottle frequently; then strain through a coarse cloth, and return the residue to the bottle with three fluid ounces of glycerine; let stand as before, and then strain into that first obtained, and make up to eight fluid ounces by adding glycerine.

One fluid drachm of this added to seven drachms of water will make milk of assafœtida containing the proper quantity of the drug.

The formula, as given above, I have made use of a number of times during the last ten years, and have found it to furnish at all times a good article of milk of assafœtida. I have also used glycerine with gum ammoniac, and, while the solution was not as perfect as that of assafœtida, I have found, upon examination, that the amount of ammoniac taken up is about the same as when the mistura ammoniaci is made by the official formula. With myrrh I did not succeed well, but still obtained a passable preparation, which I have no doubt could be, by continued experiments, much improved.—*Journal of Pharmacy.*

Ferrated Elixir of Calisaya.

There is no process of decolorizing calisaya. The elixir made from the bark will be transparent, clear, and of a beautiful reddish-brown color; a handsome preparation when freshly made, but which will become murky and deposit when standing long. To avoid this, different formulas have from time to time been published, which substitute quinia and cinchona for the percolate of the bark; the desired color may be easily given to the fluid by sandal-wood.

Take of Cinnamon water..... 2 pints.
Caraway water..... 1 pint.
Tinct. of orange-peel. ½ "
Alcohol ..... ½ "

Brandy..... 2 pints.
Syrup..... 3 "
Pyrophosphate of iron 2 ounces.
Sulphate of quinia...12 grains.
Cinchona..... 4 "

Mix the cinnamon and caraway water with the tincture of orange-peel; dissolve the salt of iron, quinia, and cinchona in it; add the other ingredients and filter. —*Druggists' Circular*, September.

Tannate of Quinia.

In a recent note made by Dr. Lisbach on tannate of quinia, this compound is said to possess many advantages over sulphate of quinine. Dr. Hager makes to this the following remark:—"After many experiments made on my own person and others, I have found that, as a febrifuge, tannate of quinine at the most is only one-tenth as effective as sulphate of quinine, and nine-tenths can again be found in the urine and fæces."

Aromatic Vinegar.

There are different formulæ employed for the preparation of this pungent and refreshing stimulant; it is dropped for this purpose on a piece of sponge, or crystals of sulphate of potassa, contained in a stoppered bottle or "vinaigrette," which is only smelt at. Sometimes a few drops are placed on a hot plate, or sprinkled about a sick-room, to sweeten the air. As it is highly corrosive, it should be kept from contact with the skin and clothes.

1. Take of Glacial acetic acid. 1 pound.
Rectified spirit.... 2 fl. oz.
Camphor (pure crushed, small).. 2½ "
Oil of cloves (finest) 1½ dr'm
" rosemary,
" bergamot,
" cinnamon,
" lavender,
" pimento, ää ½ "

Mix in a stoppered bottle, and agitate until the whole of the camphor is dissolved. Very fine and highly esteemed.

2. Take of Camphor.....1 ounce.
Oil of cloves.... 1 drachm.
" cedrat,
" lavender,ää.40 grains.
" bergamot,
" thyme, ää..20 "
" cinnamon..10 "
Glacial acetic acid.½ pound.

Mix as before. Very fine.

3. Take of Glacial acetic acid. 1 pound.
Oil of cloves.....30 grains.
" cinnamon...20 "
" lave'r (Eng).10 "
Camphor..... 2 ounces.

Mix as before.—*Druggists' Circular.*

Eclectic Formulas.

Dr. Eli G. Jones, in the *Chicago Medical Times* (*Eclectic*), gives the following formulas:

Take of Angelica root ..... ℥ iv.
Dioscorea root ..... ℥ ii.
Leonurus,
Coriander seeds,
Anise seeds,
Dill seeds,.....*aa* ℥ i.

Crush the whole; mix and macerate in forty ounces of thirty per cent. alcohol for ten days. Apply strong pressure and add half a pound of white sugar to the clear liquid.

Dose.—Half a teaspoonful in a little water every hour, or as often as necessary; is very useful as a carminative in colic, and in suppression of the menses:

Take of Parsley root,
Burdock root,
Wild carrot seed, equal parts.

Make an infusion. This formula is not only useful in dropsy, but also in chronic inflammation of the kidneys.

The following are commended as excellent diaphoretic remedies.

A good diaphoretic may be made as follows:

Take of Tr. asclepias tub..... ℥ ii.
Tr. caulophyll..... ℥ i.
Tr. aristoloch..... ℥ i.

Mix.

S. Give one teaspoonful in warm catnip or ginger tea every fifteen minutes. White root is in the proved composition powder.

Take of Myrica.....lbii.
Zingiber,
Asclepias.....*aa* lbi.
Capsici.....℥ ii.
Hydrastis .....℥ ii.

Mix.

S. Dose, one teaspoonful in a cup half full of warm water.

Fumigating Pastilles of Coffee.

The vapor from roasting coffee is known to be an excellent disinfectant or deodorizer. To facilitate its use for this purpose, Mr. George C. Close has proposed the following formula:

℞. Coffee, freshly roasted and ground.....℥ iv.
Powd. chlorate of potassa ..℥ ii.
Powd. tragacanth .....℥ iv.
Simple syrup.....℥ iii.

Make into conical-shaped pastilles of convenient size, and dry without heat. The coffee should not be very fine, but perhaps a little finer than it is ordinarily ground.—*Druggists' Circular.*

The New Treatments of Itch.

The following translation from the German of Professor Rothmund, we quote from an English source:

Balsam of Peru is preferable to all the other vaunted remedies, because the Acarus scabiei is most rapidly killed by it; because it acts with rapidity, with certainty, and agreeably; because it does no injury to the skin; because it easily penetrates the skin; because baths are not absolutely necessary with it; and because it kills all the acari and their eggs, for when well rubbed into the skin it comes in contact with the eggs. As a remedy for children it is superior to all others. The children are first placed in a warm bath, then well dried, and forty drops of the balsam rubbed well in. This is to be repeated four or five times in the next twenty-four hours, and the cure is complete. It may be used in every form of itch in children with advantage. It has, to be sure, no effect on the eczema scabiei; for this, soap baths, starch powder, or glycerine inunctions are required. In adults the best plan is to rub in the balsam of Peru all over the naked body, slowly, carefully, and gently, giving special attention to certain parts of the body, especially the fingers. Although in the treatment of itch the rubbing-in cannot act mechanically, yet, whatever substance may be used, the mode of preparing the inunction is of great importance. As the balsam is readily distributed, nine grammes of it suffice for one operation. It is not at all necessary to begin the treatment with a bath; but if a bath is first given, the rubbing in should not follow the bath immediately, as the balsam is more rapidly absorbed by a dry skin. Hence, in persons who easily perspire, the skin should be well dried before the remedy is used. When the operation is carefully performed, relapses occur very rarely, and there is never any increase in the eczema that may be present. It is seldom that prurigo occurs after the itch. Should it occur, this disagreeable symptom is more readily removed by the internal use of carbolic acid than by warm baths and soft soap or glycerine. The only objection to Peru balsam is its expense. Carbolic acid, on account of its efficacy, its facile employment, and its cheapness, deserves to be mentioned next to Peru balsam. It must be mixed with glycerine or oleum lini to prevent its caustic action. One scruple of acid. carbol. is to be mixed with two ounces of either of the two other excipients. In order to avoid poisoning, the carbolic acid must be used in small quantities, or, better still, as a salt, thus:

℞ Natr. carbol.....fl ℥ xv.
Aquæ destil.....fl ℥ clxxx.
Mix.

With this the affected portions of the skin are to be rubbed three times a day, and even in the most inveterate cases the treatment never lasts more than two and a half days; relapses are not to be feared, and if the rubbing-in is carefully performed, no erythema to speak of occurs. An additional rubbing-in should be made some eight or ten days after the cure of the itch, in order to kill any acari or their eggs that may have lurked among the clothes or bed-linen.—*Med. & Surg. Reporter.*

After-Pains and suppressed Lochia.

℞ Chloral hydrate . grs. x.
Potass. brom.... grs. xx.
Aquæ..... ʒi.
S. Every two hours. M.
—*Journal of Mat. Medica.*

Sleeplessness

occurring in hypochondria, hysteria, and, indeed, in all nervous affections, may be overcome with great certainty by the administration of the following pills:

℞ Assafœtidæ ..... dr. i.
Morph. sulphatis ..... gr. ij.
ft. pil. no. 30.
M.
S. One or two at bed-time.

They are very efficacious in arresting the dry cough which is occasionally consequent on disordered menstruation in nervous females.—*Georg. Med. Comp.*

Stimulating Hypodermic Injections in Typhoid Fever.

We find in the *Gazette Hebdomadaire* of June 16, some account of a novel mode of treatment adopted by a German physician in the collapse of typhoid fever. The subjects were Prussian soldiers, who, during the siege of Paris, suffered from typhoid of extremely ataxic type, with feeble heart-movement, small and irregular pulse, cyanosis, cold extremities, and general collapse. Dr. Zuelzer, observing the resemblance to the choleric condition, in which he had derived good results from stimulating hypodermic injections, determined to try the same method, and accordingly injected into each of the four extremities ten drops sulphuric ether, with five drops "anisated ammoniacal solution." "The results were remarkable. The pulse, before small and irregular, became full and strong; the contractions of the heart, which had been feeble and irregular, became energetic and regular; its impulse, before imperceptible, was now well marked. Frequently, after one or two injections, the cyanosis and collapse vanished. This plan has the additional advantage of gaining time for other treatment. Small abscesses are formed at the places of puncture, but they are of no importance."—*Georg. Med. Comp.*

Formula for Chlorosis.

DR. JOHN WARE'S.

℞ Ferri citrat ..... dr. ij.
Syrupi aurantii,
Aquæ menth. pip.... ää f. oz. ij.
Aquæ puræ..... f. oz. iv.
M.
S. Teaspoonful twice a day.—*Georg. Med. Comp.*

Laxative Pill.

℞ Ext. aloes pulv..... oz. ss.
Gambogiæ..... dr. i.
Rhei pulv..... dr. ss.
Olei cinnamom..... gtt. xx.
Make 120 pills.

The above is the favorite laxative pill of a distinguished lecturer and practitioner.—*Geor. Med. Comp.*

Laxative Mixture.

Prof. Lindsly says the best remedy he has ever tried in habitual constipation, is to take a half drachm of Epsom salts, dissolved in half a pint of water—adding ten drops of elixir of vitriol—*one hour before breakfast.* The smaller the dose the better, provided it will operate.

It may be taken for weeks till a cure is effected.—*Georg. Med. Comp.*

For Diarrhœa.

℞ Tinct. camphoræ ..... f. oz. iss.
Tinc. capsici..... f. oz. ss.
Spiriti lavendulæ comp.,
Tinct. opii..... āā f. oz. i.
M.
S. 20 to 30 drops pro re nata.

This is highly recommended, both in the milder forms of diarrhœa and in the early diarrhœal stage of epidemic cholera, by Dr. Horace Green, of New York. —*Georg. Med. Comp.*

Liniment for Rheumatism and Neuralgia.

PROF. COX'S.

℞ Olei origani,
Tinct. camphoræ.. āā f. oz. ss.
Granville's lotion .... f. dr. iij.
Chloroformi..... dr. iijss.
Tinct. aconiti,
Tinct. capsici..... āā f. oz. ss.
Ol. sassafras..... dr. ss.
Lin. safon. comp'd... oz. i.
M.

—*Georg. Med. Comp.*

Albuminous Potion.

RICORD.

Take of Water of lettuce .. 60 grammes.
White of eggs.... 1 or 2.
Syrup of poppy .. 30 grammes.
M.

To be taken in the course of the day, for subacute dysentery.

Pomade for Dandruff.

Take of Powdered wood charcoal,
Sublimed sulphur,....each 25 grammes.
Soot and carbonate of potash, each..... 12 "
Lard..... 100 "

Make into a pomade. Anoint the head freely at night, and put on an oiled-silk cap; in the morning wash with Castile soap. Repeat.—*L'Union Médicale.*

Pills for Retention of Urine.

HORION'S.

Take of Extract of belladon. 3 centigr.
" Indian hemp..... 15 "
Bromide of potassium..... 30 "
Camphor..... 10 "

Make into 15 pills.

Five a day in retention of urine; pass daily into the urethra a larger and larger catheter.—*L'Union Médicale.*

An Injection for Gonorrhœa.

Dr. Reynolds claims almost uniform success for the following injection in gonorrhœa:

Take of Balsam copaiba..... ʒ x.
Cryst. carb. soda..... ʒ xx.
Water..... ʒ xxx.

To one part of this emulsion add three parts of water, and inject through a catheter, carried into the urethra four or five inches, as often as twice or thrice a day. In chronic cases he uses equal part of water and the emulsion.—*American Pract.*

Pruritus Vulvæ.

LISFRANC.

Take of Bichloride of mercury. 1 part.
Alum..... 20 parts.
Starch.....100 "
Water.....2,500 "

Mix.

S. Apply freely to the part.—*Revue de Thérap.*

Antacid Powder.

Take of Calcined magnesia.....8 grs.
Bicarbonate of soda.....8 "
Powdered canella.....8 "

Mix, and divide into six powders, one of which may be given every two hours to infants suffering from diarrhœa with green stools.—*Revue de Thérap.*

Carminative Mixture for Diarrhœa.

Dr. E. H. Coover has used the following with great advantage in epidemic diarrhœa with vomiting:

℞ Syrup of ginger....f. ℥ iij.
Tr. of opium.....f. ℥ j.
Oil of cloves.....gtts. xxv.
Oil of cinnamon...gtts. xxv.
Syrup of rhubarb..f. ℥ ij. M.

Dose. One dessert-spoonful every two or three hours. This remedy seemed to ease.—*Med. and Surg. Reporter.*

Treatment of Chorea.

BY DR. EDWARD MONTGOMERY.

When the disease depends on anæmia, mal-nutrition, or an altered condition of the blood, favorable hygienic measures, with tonic medicaments, are indicated. In these forms of the disease strychnine, quinine, arsenic, zinc, iron, etc., are the medicines from which most good is to be expected. The following is a favorite prescription of mine in these cases:

℞ Strychniæ..... gr. i.
Quiniæ sulph..... ʒ i.
Acidi phosphorici dilut.... f. ℥ i.
Aq. menth. virid..... f. ℥ vi.
Tinct. cardam. comp..... f. ℥ i.
Misce.

Sig. A teaspoonful three times a day, for a child eight or nine years of age.

The citrate of iron and quinine, or Fowler's solution of arsenic, with the tincture of cimicifuga racemosa, are remedies well adapted to this form of the disease.

When there is exalted nervous sensibility or hyperæsthesia, musk, assafœtida, castor, valerian, zinc., etc., will be found of essential service. A very good prescription is the following:

℞ Moschi ..... gr. xii.
Zinci oxidi..... gr. xxiv.
Sacchari..... ʒ i. Misce.
Divide in chart No. xii.
S. One powder three times a day for a child aged eight or nine years.

The only objection to the above is the expensiveness of the musk.

Another very excellent compound in these cases is this:

℞ Zinci sulphatis..... gr. xxx.
Ext. valerian (fluid) fl ℥ i.
Syrup limonis..... fl ℥ iii. Misce.

Sig. A teaspoonful three times a day, gradually increasing the dose.

I have found this prescription act most happily and promptly, stopping the choreic movements in a few days. To a watery solution of the sulphate of zinc may be added the tincture of castor, musk, cimicifuga; or any of these tinctures may be added to Fowler's solution, or the fluid extract of valerian, and it is well to have a variety of forms, so as to administer that combination which is most grateful and most efficacious to the patient. If pills can be swallowed, zinc and assafœtida can be given in that form with very flattering prospects of success. We have very great faith in the efficacy of zinc in a great many cases of chorea; either the oxide or the sulphate will answer; we should gradually and steadily increase the dose, and keep giving the medicine until the desired results are obtained. We have such a confidence in the efficacy of zinc in the great majority of these cases, and we have had such remarkable success with it, that we consider it almost a specific. A great many years ago we cured a young woman, aged twenty-three, who had been constantly suffering with the disease for ten years. In this case, besides the zinc, we prescribed the strychnine and quinine mixture, and also gave Vallet's carbonate of iron pills freely. It is important to pay attention to the bowels. When sluggish or torpid, the following prescription will be found particularly appropriate in this as in many other diseases attacking patients of weakly or nervous constitutions:

℞ Ext. belladonna..... gr. ii.
Ext. nucis vomicæ..... gr. iv.
Ferri sulph. exsicat..... ʒ ss.
Pulv. aloes soc..... ʒ ii.

Mix and divide into twenty pills, and give one night and morning, or one every night, as the case may require, until the bowels become perfectly regular.

Hydrate of Chloral in Hooping-Cough.

Dr. Karl Lorey reports (*Deutsche Klinik*, 46, 1872) the results which he has obtained from the use of chloral hydrate in pertussis. He gives it in the following formula:

Take of Hydrate of chloral... 5 parts.
Distilled water.....150 "
Syrup of orange-peel. 15 "
M.

The dose is from one to three teaspoonfuls, according to the age of the child. Generally, one teaspoonful is given in the morning, and one or two in the evening. The medicine is commenced as soon as the earliest characteristic symptoms appear, and is continued until the cough loses its catarrhal character. It is borne well by children, and produces no unpleasant consequences. It produces a marked reduction in the number and intensity, as well as in the duration, of the paroxysms.—*Brit. Med. Journ.*, July 20, 1872, *from Wiener Med. Wochenschr.*, June 15.

Ointment for Piles.

M. F. Guym, of the Necker Hospital, Paris, prescribes in painful hæmorrhoids an ointment composed of one part of extract of belladonna, two of extract of rhatany, and fifteen of lard.—*The Doctor.*

Chlorodyne.

℞ Morphiæ mur.....gr. xij.
Acid hydrochlor. dil....q. s.
Tinct. lobeliæ.....f ʒ iss.
Tinct. capsici .....f ʒ j.
Ol. ment. pip.....♏ v.
Chloroform.....f ʒ vi.
Acid. hydrocyan. schl...♏ xviii.
Æther. sulph. rect.....f ʒ i.
Treacle.....f ℥ iss.
Ext. glyc. (mollis).....ʒ i.
Aq. ad.....f ℥ iij.
M. —*The Doctor.*

GENERAL RECEIPTS.

Detersive Paste for Removing Grease from Silk.

Rub together fine French chalk and lavender to the consistence of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting paper above and below the silk, and smooth it with a moderately heated iron. The French chalk may then be removed by brushing.—*Physician & Pharmacist.*

Tonic Tooth-Powder.

Triturate well together one ounce of pulverized Peruvian bark, one ounce of pulverized white castile soap, and two ounces of the best prepared chalk. It may be flavored by adding a little of the oils of wintergreen and rosemary, with the latter in a very small proportion. The powder is not only good for the teeth, but also a preventive of, and a remedy for, spongy gums. Another very good tooth-powder may be prepared by the addition of one ounce of pulverized orris-root to the above. The addition of bole armenian to tooth-powders is only for the purpose of coloring them, and is not of the slightest benefit. The Peruvian bark will impart sufficient coloring to this preparation.—*Physician & Pharmacist.*

To Wash Silk.

Half a pint of gin, four ounces of soft soap, and two ounces of honey, well shaken. Wet a sponge with the mixture, and rub the silk, which should be spread upon the table. Then wash it through two waters, in which put two or three spoonfuls of ox-gall, which will brighten the colors and prevent them running. Do not wring the silk, but hang it up to dry, and while damp iron it. The lady who furnishes this recipe says she has washed a green silk dress by it, and it looks as good as new.—*Physician & Pharmacist.*

Weil's Jelly for Invalids.

Take 4 Calf's feet.
2 pounds of beef.
1 old chicken.

Boil them together one afternoon in four quarts of water, with half an ounce of salt, skimming as required. During the last hour of the cooking add a small (half-pound) pike. Pour off the liquor and allow to cool during the night. In the morning skim off the fat and clarify. To do this, warm the jelly slightly and add the whipped whites of eggs with the shell. Boil until flocks of albumen form, and the jelly becomes clear on standing. Take from the fire and wait until the liquid has settled. Filter through a napkin, add to the clear filtrate two ounces of Liebig's Extract. Pour the liquor into suitable moulds, and set aside to cool.—*Diätetisches Koch-Buch, by Jos. Weil, of Freiburg*, 1871.

Jelly of Ox-Muzzle.

Take a slightly-stewed ox-muzzle, a similar foot, wash clean, cut in small pieces, and pour over enough of flesh broth to just cover; add the rind of a lemon cut small, a whole onion, with its adherent roots, salt in considerable quantity; boil for about two hours.

During the latter part of the cooking a

little white pepper may or not be added, according to taste. When the fluid becomes thick enough the onion is to be removed. There is then to be added a beef tongue previously prepared. The tongue should be one not too strongly salted, and but slightly smoked, and should be slightly stewed and cut into small pieces. After the addition of the tongue the whole should be cooked a quarter of an hour longer. The moulds must now be prepared by pouring cold water into them, so that the jelly will come out readily. The pieces of meat fished out of the preparation must now be evenly distributed through the moulds, and the liquor strained through a napkin be poured into the receptacles, which must then be set aside to cool.—*Ibid.*

A Table Mustard.

Take of Powdered coriander..	5	parts.
Cloves.....	5	"
Cinnamon.....	7	"
Black mustard.....	125	"
White mustard.....280		"
Sugar.....280		"

This mixture is then brought to the proper consistency by the addition of vinegar, and afterward placed in a *stone* jar, in a warm spot, to ripen. The vessel should remain open, to allow the escape of the excess of mustard oil.—*Ibid.*

Fragrant Sozodont.

1. Sapo hispaniola.....	℥ i.
Aqua pura.....	℥ xviij.
Spt. vini rect.....	℥ vi.
Syr. simplex.....	℥ v.
Tinct. myrrh,	
" cinch. comp., āā .	℥ i.
Ol. gaulth.....	gtts. xij.
Santalum.....	q. s. to color.

2. Make a not too concentrated tincture of quillaya bark with *diluted* alcohol, add one-third glycerine and perfume to suit.

[1 Part oil peppermint to 6 oil bergamot.]—*Druggists' Circular.*

Polish for Wood-work.

The Society of Sciences in Hamburg has recently published the following:

Add to 1 kilo. of fluid copal varnish 15·620 grms. of drying linseed oil, and heat until they combine. Apply this to the wood after having given it a coat of gelatine and dry carefully. It is well to finish the article with a coat of wax dissolved in ether.—*American Chemist.*

Soap for Stiffening Wool and Fulling Cloth.

BY M. DEHNASSE.

Dissolve in as little water as possible 100 kilos. of hard soap, 50 of glue, and 15 of calcined soda. To stiffen goods with this mixture, dissolve one part of this soap in 10 parts of water, and add sufficient oil to form an emulsion.—*American Chemist.*

Artificial Water-Lime.

It has been long known to chemists that water-lime consists substantially of quick-lime, burnt clay, and a small portion of the oxides of iron and magnesia, but scarcely any effort has been made to utilize this knowledge. All yellow or red clays contain iron, and most specimens of lime in use contain the required magnesia. If burnt clay, or brick dust in the fine powder, be mixed with an equal weight of fresh-slacked lime, and twice this weight of clean, sharp sand be added, a compound will be formed which will harden under water equal to the best hydraulic cement.—*Druggists' Circular.*

Water-proof Glue.

Ordinary glue can be rendered insoluble in water by adding to the water with which it is mixed, when required for use, a small quantity of bichromate of potash, and exposing the articles to which it is applied to the light. Chromic acid has the property of rendering glue and gelatine insoluble. It is probable that paper could be rendered impervious to water

by pasting the sheets with this prepared glue. The bichromate is said to render rubber particularly hard and unattackable by hot water. The proportion of bichromate to be taken must be ascertained by experiment; for most purposes one-fifth of the amount of glue employed will be found sufficient.—*Exchange.*

Furniture Varnish.

The most common varnish of this kind is prepared by dissolving—

White wax..... 1 pound, in
Oil of turpentine (rectified). 4 pounds.

—*Druggists' Circular.*

Solution of Shellac in Water.

The shellac is broken up, covered with a concentrated solution of carbonate of ammonia, and boiled, preferably on a water-bath, till the ammoniacal smell has disappeared. Fresh solution is added, and the boiling continued till the shellac forms a coherent, somewhat sponge-like mass. After all the carbonate of ammonia is expelled by boiling, this mass is readily dissolved by pouring hot water over it. A kind of wax or soap will generally be found floating on the surface after cooling, from which the solution may be separated by straining. This solution, brought on paper, cloth, etc., dries rapidly, and leaves a thin, coherent, lustrous, and firmly-adhering film of shellac. Such a solution, of course, cannot harm the fibre; but as it is generally colored, even when bleached shellac is used, it will probably not be applicable to light colors.—*Manufacturers' Review.*

Photographic Collodion.

In the *Photographische Mittheilungen*, No. 93, Dr. Van Monckhoven proposes the following new method of preparing collodion:

Dissolve 40 grammes pyroxiline (of no matter what quality) in 1 litre each of alcohol and ether, pour the liquid into a vessel holding 10 litres of water and shake well. The resulting precipitated pyroxyline is placed upon a filter of muslin, washed and dried, and is found to weigh from 20 to 35 grammes. This product is only feebly inflammable, almost totally soluble in alcohol, and even if obtained from the most inferior gun-cotton it will produce very superior collodion. No matter in what manner the collodion is iodized, its consistency will remain the same. Iodide of cadmium does not thicken it, as is the case with ordinary collodion. Neither do iodides of sodium and ammonium make it thinner.

Coloring of Paper and Leather with Aniline Lakes.

F. SPRINGMUEHL.

A mixture of alcoholic solutions of aniline colors and gums is an excellent means for coloring paper and leather.—*Musterzeitung*, No. 41.

F. Springmuhl, says, *Polytechnisches Notizblatt*, No. 6, for dying *red*, fuchsin, soluble in water, is dissolved in water of a temperature of 26° to 30° C., and applied with a brush, no mordant being used. For *violet*, also, that soluble in water is preferable, and the solution should contain a little sulphate of aluminum. Rapidity is required in applying it to prevent its striking through. *Blue* does not so readily penetrate the leather, and is applied in dilute, light-blue solutions, darker shades being produced by repeating the operation several times. As mordant, ammonia salt, alum, or chromate of potash may be used. *Green:* the leather is first brushed over with sulphate of ammonia solution and rinsed off; the solution of iodine green is then applied. If picric acid be used, it must not be put in the green solution, but applied by itself, either before or after the green.

For *yellow*, picric acid is preferred; and for *brown*, wood colors. — *American Chemist*, July, 1872.

The Filtration of Water.

Artificial filters for cities may be made by having basins of masonry, on the bottom of which large stones, then smaller,

then gravel, and finally fine sand is laid, and allowing the water to percolate this layer. About an inch of the upper layer of sand will hold the most of the filtered impurities, and when this is removed, and replaced by a fresh amount of sand, the filter may be considered as cleansed. Filtering, by causing the water to pass up from below through such a layer, has been found to be insufficient. The filter, as first described, may last for some months before requiring to be cleansed, or, in some cases of heavy rain-falls, only some days. A clear water basin is necessary for the reception and distribution of the water after filtering, and should be covered over, and at least large enough to hold one day's supply. The filtering bed of the Chelsea Water-works is given as follows:

Fine sand.....	4	feet.
Coarse "	4	"
Pieces of slate....	6	inches.
Fine gravel.....	1 " 6	"
Coarse "	1 " 6	"

The layer of the Longchamp basin consists of—

Fine sand.....	0.30	metres.
Medium sand.....	0.08	"
Coarser sand	0.18	"
Fine gravel	0.42	"

Sifted stone passed through a ring of 16 decimetres area 0.12.—*Ibid.*

To Cut and Bore India-Rubber Corks.

Dip the knife or cork-borer in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary reagent solution. Alcohol is generally recommended, and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda-lye, it goes through india-rubber quite as easily as through common cork; and the same may be said of a cork-borer, of whatever size. I have frequently bored inch-holes in large caoutchouc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the usual contraction of its diameter, the stopper should be held firmly against a flat surface of common cork till the borer passes into the latter.—*W. F. Donkin*, in *Chemical News.—Dental Cosmos.*

To mend Rubber Hose.

Cut the hose apart where it is defective; obtain a piece of iron pipe ten or twelve inches long; twist the hose over it until the ends meet, and wrap with strong twine, well waxed.—*Scientific American.*

To clean Flasks from Emery.

M. Vautherin says that when emery has become hardened around the mouths of flasks, it can be removed by allowing one or two drops of glycerine to run round the line of junction. Little by little the glycerine insinuates itself so that the cake is loosened, sometimes after a few hours, sometimes not for a day or two. When the emery is fastened by a resinous substance, alcohol must be substituted for the glycerine.—*L'Union Pharmaceutique*, August, 1872.

Preservation of Potatoes.

Speaking of potato rot, the *Food Journal* of October 1st, says:

We give an outline of the process for the benefit of those who like to try it. The raw potatoes, however much diseased, are soaked in a solution of sulphate of magnesia, after which they are left in a shed or store-room till they are quite dry, when the diseased portion will be found to have shriveled, thus arresting the decay and preserving the sound portions, which, when cut out and cooked, are said to be very good. The above was the subject of an experiment which was repeated on a large scale, and with perfect satisfaction. So

far as the preservation of potatoes by the simple process of drying is concerned, it is only a development of a plan long since practised by the natives of the interior of Peru. In this form the potato is universally used; indeed it is preferred to the fresh state. The process is very simple: the tubers which are about the size of a walnut, are sprinkled with water and exposed to the air, and become frozen during the night. The operation is repeated for three nights, after which they are dried in the sun, and are then stored away for future use. In this way, of course, they are preserved whole, but in many parts of Continental Europe potatoes are preserved in large quantities by cutting them into slices, and subjecting them to a moderate heat. Another suggestion for preserving potatoes whole has recently been submitted to the Agri-Horticultural Society of India. The writer says:

"My idea is to dip the washed roots in a hot alkaline solution for a certain time, so as to destroy all vitality without cooking the starch. This done, they should be allowed to dry in the sun, and then be kiln-dried at 135° F. The skins will not be removed. Such dried potatoes may be kept packed in chopped straw, and when required for use they will have to be soaked in water, and may then be boiled or roasted at pleasure. If well dried, they might be reduced to a meal. If the plantain can be dried, I see no reason why the potato cannot be similarly treated."

To empty Bottles in Half the Ordinary Time.

Invert the bottle and give it a rotary motion; the water will then issue in the form of a tube, allowing the air to pass up through the middle.—*Chemical News*, July 19, 1869.

Parchment Paper.

C. Campbell says that this is readily made if the paper be first saturated with a strong solution of potash alum and then dried, before it is exposed to the sulphuric acid. The alum prevents too great action of the acid, and is with it removed at the subsequent washing.— *Viertel-jahrschr. prakt. Phar.*

The Pods of Peas.

The pods of peas are commonly thrown away as refuse after shelling, or used only for feeding cattle or pigs; but when young and tender they are an excellent vegetable, very fit for being used in soups. There is a kind of pea called the Sugar Pea, the pods of which have only a thin pellicle as an internal lining, instead of the hard lining found in other kinds, and peas of this kind are boiled in the pod and used like kidney-beans. The pods of the ordinary garden varieties are, however, of equally delicate flavor, and the only, but insuperable objection, to their use as a boiled vegetable is the hard and unmasticable interior lining. They may, however, be used in soups, being, in the first place, boiled in a separate vessel until they can be easily rubbed to pieces. This is done by means of a wooden spoon, or similar implement, and the pea-shells are then placed in a drainer having wide holes, with the water in which they were boiled, when the eatable part passes through the drainer with the water, and forms an excellent addition to soups; or a good soup may be made by merely adding to it a proper quantity of extract of meat, or of Australian cooked meat, and heating it a little. The strings and hard linings of the pods remain upon the drainer.—*Food Journal.*

Method of preserving Wooden Labels.

Wooden labels for plants to be inserted in the ground, may, it is said, be preserved for an indefinite time by first dipping them in a solution of one part copper vitriol, and twenty-four parts

water, and subsequently immersing in lime-water or a solution of gypsum.

Practical Notes on Cements.

It may be a somewhat bold assertion, but it is nevertheless a true one, that nearly every man, woman, and child in the country is interested in this subject. It is not alone the carpenter with his glue, or the professional paper-hanger and the book-binder with their paste, but it is the business man with his bottle of mucilage, the housekeeper with her cements for mending broken furniture, glass, and crockery, the school-girl with her scrap-book, the boy with his kite, and even the little girl with her toys, that feel a desire to know the best methods of preparing and using cements. We consequently find that no contribution is more acceptable to those journals that deal in practical matters than a recipe for a new cement, and the paragraph containing it is sure to be extensively republished. Now the truth is, that we do not so much require a knowledge of improved cements as of the best methods of using those that we have. Good glue leaves nothing to be desired as an article for uniting pieces of wood. When it is properly applied, the pieces united by it will part anywhere rather than through the joint. Well-made paste will cause pieces of paper, cloth, etc., to adhere to each other, and to wood, plaster, earthenware, etc., so that the very substance of the paper, cloth, etc., will give way before the paste separates; and the same is true of many cements in use for mending earthenware, glass, etc., when these are applied by persons who thoroughly understand the proper method of doing it. And yet how often do we see articles of furniture that have been joined by glue, prepared and applied by those who have had no experience in its use, which actually fall to pieces by their own weight! And how frequently do we see housekeepers purchase bottles of cement for mending broken glass, china, etc., and condemn the vendor as a cheat, when the fact is that the very same cement, in the hands of those who know how to use it, is capable of uniting pieces of broken glass so that the joint will be the strongest part of the object!

The art of using cements depends upon certain general principles, which are easily understood and put in practice. The power which all cements have of uniting separate pieces, depends upon the strength of the cement itself, and upon its adhesion to the objects to which it is applied. Strange to say, it has been found in practice that a joint may actually exhibit a strength which is greater than that possessed by the cement when the latter exists in large masses. A bar of solid glue an inch square and a foot long is not so strong as a similar bar composed of thin strips of wood glued together; and the little sticks of cement that are sold for mending earthenware are very brittle, although they form joints that bear a great deal of rough usage, and this principle seems to be the foundation of the fact that the thinner the layer of cement, the stronger will be the joint. Most inexperienced persons err in using too much cement. Actuated by liberal motives, they are determined not to stint matters, and in their desire to use enough, they use by far too much. Let us take, for example, the case of the coarsest and simplest cement—the mixture of resin, shellac, and finely-ground brick-dust—that is so frequently sold for mending earthenware. The directions are to apply it hot; and, indeed, it cannot be used cold, since it must be melted before it can be applied to the surfaces that are to be joined. But in nine cases out of ten the broken pieces are merely warmed so far that the cement may be smeared over them, and when they are brought together a thick layer of cement is always allowed to intervene. The result is either that the joint breaks along the line of the cement, or the cement separates from one of the surfaces. If the pieces had

been made sufficiently hot to render the cement as fluid as possible, the layer of cement would have been exceedingly thin, and the adhesion between it and the surfaces to be joined have been so great that separation would have taken place anywhere else rather than along the line of union. We must, therefore, select a cement that will be as strong as possible, and we must also see that the layer of cement is as thin as it can be made without leaving any part of the surfaces bare.

The adhesion of any cement to the surface to which it is applied depends largely upon the closeness with which the cement and the surface are brought together; and this depends very much upon the condition of the surface as regards freedom from grease, dirt, and even air. It may sound strange to talk of freeing a surface from *air*, and yet the feat is not impossible. All surfaces that have been exposed for some time to the air attract a thin film of that gas, which prevents the intimate contact of other surfaces. This fact is well known to electrotypers, who find it necessary to take the utmost pains to get rid of the thin adhering layer of air which invariably attaches itself to their plates. A very striking example of the influence of this layer of air may be shown as follows:—Take a new and clean needle and lay it gently on the surface of some water, and it will float. The explanation is, that the water is prevented by the adhering layer of air from coming into contact with the needle and wetting it, and the combined influence of the buoyant power of the air and cohesion of the water is sufficient to float an ordinary sewing-needle. The easiest way to drive off this adhering air is to heat the article. If the needle be heated, it will be impossible to cause it to float until after it has cooled, and has been exposed to the air for some time; and the same process is applicable to most surfaces to which cement is to be applied.

Whenever an article is broken which is considered worth mending, the broken surfaces should be kept scrupulously clean until such time as we are ready to repair the damage. When a valuable glass or china vessel is broken, the usual practice is to fit the surfaces together a dozen or twenty times, and rub them all over with the fingers. This is done without any object except to gratify the mere idle curiosity of the moment, but the result is that the broken edges are chipped, the surfaces are covered with the oily exudations of the fingers, and a neat and strong joint becomes unattainable. Keep the edges away from each other until you are ready to cement them together, and keep your hands off them. The same is true in regard to the joining of pieces of wood, such as broken furniture. We have seen people attempt to glue together two pieces of wood the surfaces of which were covered with old glue, the remains of former efforts to unite the parts. Such joints cannot hold even if the very best glue be used. In cases where it is desired to unite joints that have been previously imperfectly cemented, the old cement should be carefully removed. Glue may be removed by water, shellac, and resin, by means of alcohol, and other cements by means of their appropriate solvents. There are two other points that demand attention, the first being the necessity of bringing the surfaces together by means of heavy pressure. Pieces of wood that are firmly clamped together by means of powerful screw-clamps, while the glue is hardening, will adhere with a force far greater than if they were merely stuck together. In the second place, we must allow abundant time for the glue to harden. These cements that merely cool, and do not *dry* out, require very little time. Cements of which the solvents are water or alcohol dry out in a few days; but those which have an oily basis, like white-lead, require half a year to dry perfectly. People frequently attempt to use articles cemented with such compounds before the

drying process has been completed, and, as a consequence, fail in their efforts.

These general principles are applicable to all cements, and a careful observance of them will frequently enable us to attain success where others have failed. —*Harper's Bazar.*

Cement for Fixing Glass Letters.

Some say a solution of shellac in methylated spirits will be sufficient, and also water-proof. Others recommend the following cement:

Powdered orange shellac.....1 oz.
Alcohol.....2 oz.

Place the containing bottle in a warm place. Agitate frequently, until all the lac is dissolved. Apply cold. This will resist wet, and will cement strongly metals, wood, porcelain, glass, etc. Then, again, it is said a thick solution of marine glue in naphtha will answer perfectly if color is no object. But the glass must be chemically clean, and this is not always easy. The least trace of soap or grease will spoil the adhesion of any cement. Try soda or ammonia, followed by whiting and water, clean cloths, and plenty of rubbing, and let the cement dry on the letters till the surface just begins to be "tacky" before you apply them. Many excellent recipes fail on a first trial from the omission of some minute precautions which are of more importance than some suppose.

Cement for Aquaria.

Dr. G. Elliott, Meadville, Pa., gives the following formula, which he has tried and found satisfactory:

Four pounds resin, four pounds Spanish whiting, two pounds tallow.—*Dental Cosmos.*

Cement for Marble.

According to Ransome, the following mixture affords an admirable cement for marble and alabaster:

Stir up to a thick paste, by means of a solution of soda-water glass, 10 parts Portland cement, 6 parts prepared chalk, 6 parts fine sand, 1 part of infusorial earth. An irregular piece of coarse-grained marble was broken off by means of a hammer, and the surface coated by a brush with the above paste, and the fragment inserted in its place. After twenty-four hours it was found to be firmly set, and it was difficult to recognize the place of fracture. It is not necessary to apply heat.—*Journal of Applied Chemistry.*

Cement to Resist Water.

The trouble with red lead and oil is, that it is not always able to adhere to glass. Probably the best cement is that which consists of three parts of powdered pipe-clay, one part oxide of iron, and as much linseed varnish as is sufficient to make a stiff paste; or the so-called stone cement—nine parts of pipe-clay, one of litharge, and so much linseed oil as to be of the proper consistency. This becomes as hard as iron, and adheres with great tenacity to glass or almost any other substance.—*Journal of Applied Chemistry.*

Cement for Glass and Porcelain.

Leave ½ ounce beef bladder in tepid water until it swells up; rinse and digest in warm alcohol; dissolve ¼ ounce mastic in ¾ ounce alcohol, and pour the two solutions together and add ¼ ounce pure gum ammoniac in powder. Shake thoroughly, and evaporate to proper consistence over a water-bath. This mixture will keep in well-stoppered bottles, and when required, can be rendered soft by immersing the bottle in warm water. Apply to warm surfaces with a brush. It is said to be excellent for broken glass and porcelain.—*Journal of Applied Chemistry.*

A Good Cement.

The following has been tested for cementing wood, iron, leather, glass, paper,

and almost all kinds of household materials:

Best isinglass, half an ounce; rub it between the hands until it breaks down into a powder, put in a bottle, and put as much common acetic acid to it as will just wet the mass through; stand the bottle in some boiling water, and the paste will dissolve, and be fit to use at once; it will be solid when cold, but is easily warmed up the same as before. Leave the cork out when warming, or there is danger of bursting the bottle. —*Boston Journal of Chemistry.*

On the Preparation of Colored Fast-Drying Cements.

Solution of silicate of soda of 33° B. is intimately mixed with precipitated chalk, so as to form a thick plastic mass. With the addition of the following substances, cements of different colors and extraordinary solidity are produced, mostly drying in from six to eight hours, allowing of an extended application for chemical as well as industrial purposes. Using first finely-powdered sulphuret of antimony, a cement is formed, which, after solidifying, may be polished by use of an agate. 2. With limatura ferri in impalpable powder, a black cement is produced. 3. Zinc dust (so-called zinc-gray) forms a gray cement, which becomes very hard, and, after solidifying, assumes the shining white color of metallic zinc when polished with an agate. 4. Carbonate of copper forms a light green. 5. Oxide of chromium, a dark green. 6. Cobalt blue, a blue. 7. Litharge, an orange-colored. 8. Vermilion, a light-red. 9. Carmine, a violet-red cement. Solution of silicate of soda, mixed with carbonate of lime alone, forms a cement of great solidity; equal parts, by measure, of sulphuret of antimony and limatura ferri, mixed with solution of silicate of soda to a stiff paste, forms a black cement of extraordinary hardness; zinc dust and limatura ferri, in the same proportions as the preceding, form a cement of a dark-gray color.—*Jour. f. prakt. Chemie, Bd.* 2, *p.* 138.—*Pharmacist.*

Black-Walnut Color on White Woods.

Furniture of pine or other white woods can easily be made to appear like black-walnut. For this purpose a solution is made consisting of three ounces of permanganate of potassa and three ounces of sulphate of magnesia, dissolved in two quarts of hot water, and applying it by means of a brush upon the surface of the wood, and when dry applying it once more. The manganate is decomposed in contact with the ligneous fibre, and a fine and durable black-walnut color is produced. Small wooden objects to be stained may be immersed in the above solution, considerably diluted, for from one to five minutes.—*Mon. de la Teinture,* 1870.—*Pharmacist.*

To detect Tallow in Wax.

M. Hardy proposes the following process:

Alcohol of 29 degrees has the same specific gravity as wax, and therefore pure wax, when placed in it, will remain suspended. If an alcohol which will hold a specimen of the suspended wax in suspension shows a higher number of degrees, some tallow has doubtless been added. Thus an alcohol marking

29.	degs.	represents	wax	100	tallow	0
39.63	"	"	"	75	"	25
50.25	"	"	"	50	"	50
60.87	"	"	"	25	"	75
71.80	"	"	"	0	"	100

—*Journal de Pharmacie.*

Ratsbane.

The following is a recipe very similar to COSTAR'S RAT EXTERMINATOR:

℞ Phosphorus..... ʒ iij.
Aquæ bullientis..... ..... ℥ v

Dissolve the phosphorus in the boiling water, and while yet hot add—

Pulv. semini sinapis	℥ ij.
Tritici farinæ	℥ v.
Glycerinæ	℥ i.
Axungiæ	℥ iss.
Pulv. sacch. albi	℥ ij.

Mix. Put up in 1-ounce tin boxes.

Directions: Spread on bread like butter, strew white sugar on top, and then cut in small squares.

It will exterminate rats if made according to directions.

The *Chicago Pharmacist* commends the following formula:

Take of Starch	8 ounces.
Flour	24 "
Glycerine	24 fluid ounces.
Water	3 pints.
Phosphorus	2 ounces.

Upon the unpulverized starch, placed in a convenient vessel, pour one pint of water; stir up the mixture, and pass it through a No. 60 sieve into a cast-iron enamelled dish having the capacity of a gallon; add one and a half pints of water, then the flour, and mix thoroughly; now introduce the glycerine and apply heat best by means of the sand-bath, until the plasma begins to form, stirring in the meanwhile constantly with a suitable pestle; then take the vessel from the fire and stir as before while the plasma forms, so as to evenly divide it. After a few minutes re-apply heat, stirring briskly until the plasma has completely formed, and then set it aside to cool, stirring it up occasionally.

Now place six ounces of the plasma, gradually mixed with eight fluid ounces of water, into a porcelain measure having the capacity of two pints; set this into nearly boiling hot water, and when the mixture has become sufficiently hot, drop in about two drachms of the phosphorus. When this has fused, agitate the whole thoroughly with a spatula or pestle, and incorporate the remainder of the phosphorus in the same manner. By this manipulation the phosphorus is effectually extinguished without the risk of coming in contact with the air in an inflammable condition.

After this, thicken the phosphoric emulsion with more of the reserved plasma, and finally incorporate it thoroughly with the remainder. The finished preparation is best preserved in small wide-mouthed bottles protected from the air.

Sachet Powders.

The following is from the *Chemist and Druggist* for August:

Patchouli leaves	8 oz.
Laven'r flowers (lightly dried)	3 "
Orris-root	2 "
Cloves	1 "
Essence bergamot	1 drachm.
Essences of ambergris and musk, each	½ "

The dry ingredients are to be separately reduced to powder, the scent then added, and the whole finally passed through a fine sieve, to insure perfect admixture.

For a cheap scent this may answer:

Orris-root, in coarse powder	½ pound.
Rectified spirit	1 pint.

Exhaust by percolation, and add a few drops of essential oils, as bergamot, cloves, or otto of roses. Might be vended as "Spirit of Violets."

Indelible Ink without Nitrate of Silver.

Dissolve 4 parts of aniline black in 16 parts by weight of alcohol, with 60 drops of strong hydrochloric acid, and dilute the dark-blue solution with 90 parts by weight of water in which 6 parts of gum arabic has been previously dissolved. This ink is said not to attack steel pens, nor is it altered by alkalies.—*Druggists' Circular.*

Preservation of the Cadaver.

At Guy's the bodies are preserved by a method given in detail by Mr. Howse in the *Guy's Hospital Reports* for 1872. The process consists in injecting into the femoral artery of one or both sides of the

body about three pints of glycerine, in which one pound and a half of arsenic has been boiled, and in two or three days forcibly injecting, by means of a syphon, two or three gallons of pure glycerine. By this means the glycerine is made to permeate all the tissues of the body, bullæ containing glycerine not unfrequently forming on the skin. It is necessary to attend to the condition of the fingers and toes, for at first they swell up and become plump, but if left for a few days, they shrivel and dry up. This shrivelling is entirely obviated by injecting a further quantity of glycerine into the arteries. The bodies are then laid aside and covered with cloths soaked in carbolized glycerine, or are imbedded in sawdust soaked with carbolic acid. The red paint may be employed at any time, but it is well to wait for a few days after the injection of the glycerine before using it. The bodies are in good condition, the skin has become dark, but the muscles are of a good color, and firm, and the nerves sufficiently tough to be readily traced out. This method, like the preceding one, is not well adapted for bodies in which a post-mortem examination has been made. The most serious objection to this process, however, is the cost, which is at least thirty shillings for each body.

At St. Thomas's the method adopted is identical with that used by Professor Marshall, to whom the authorities at this school are indebted for the details. In this process the arteries may or may not be injected with a weak solution of arsenite of potash, but Mr. Marshall objects to large quantities of arsenic being used, one or two ounces being quite sufficient for the purpose. The bodies are then immersed in a fluid consisting of twenty-four gallons of water, twenty-eight pounds of common salt, one pound and a half of nitrate of potash, and three pints of Burnett's fluid (chloride of zinc) to each body. After many trials these proportions have been found to be best adapted for preserving bodies for dissection, for if too much salt or nitrate of potash be used, the skin gets very hard. By this means Mr. Marshall has been able to preserve portions of the body in good condition for demonstration for a period of ten years. This method seems to be the best that we have yet seen; it has the further advantage of being the cheapest, and we understand that the fluid in which the bodies are immersed need only to be changed once in several years. If this process be adopted, it is advisable to inject the paint within a few days of immersion.—*Medical News.*

Hair-Dye.

Harmless hair-dye is made in Greece from green walnut burs (Juglans regia), by extracting with water and evaporating until the regianic acid is precipitated as a black powder.

BIBLIOGRAPHY.

PRACTICAL LESSONS IN THE NATURE AND TREATMENT OF THE AFFECTIONS PRODUCED BY CONTAGIOUS DISEASES. BY DR. JNO. MORGAN, A.M. Philadelphia: J. B. Lippincott & Co. London: Ballière, Tindall, & Cox.

UNDER the above innocent-looking title Dr. Jno. Morgan has put forth a duodecimo volume of nearly 350 pages upon Syphilis. The extraordinary frontispiece of the "frightful example" at once prejudiced us against the book, but further examination has shown that in spite of its coarse, often meaningless illustrations, the work is worthy of strong commendation. Dr. Morgan has had a very large experience in the disease—an experience which shows itself on every page—and is also well acquainted with the work of his compeers. He believes that the disease may be produced by the contact and admission of a secretion unconnected with any local sore, but poisoned by a constitutional taint. He also is decidedly in favor of syphilization. Limited space forbids our following his arguments for the latter, but we think every one who comes in professional contact with venereal disease should ponder them well, for they certainly are worthy of the most earnest attention.

The style is clear and pointed, yet perhaps is too broken to be called elegant.

NEW TREATMENT OF VENEREAL DISEASE AND OF ULCERATIVE SYPHILITIC AFFECTIONS BY IODOFORM. Translated from the French of Dr. Izard. By Howard F. Damon. Boston: Jas. Campbell.

DR. IZARD appears to have had ample scope in l'Hôpital du Midi for experiments on the therapeutics of syphilis, and in the little volume before us trumpets forth the praises of iodoform as a local application in various syphilitic ulcerations. In infecting chancres, he states that it is rarely necessary, although it certainly hastens cicatrization and calms the severe pains occasionally present. As a resolvent in syphilitic adenitis, the iodoform may be used as an ointment; but where there is indolent, painful ulceration following suppuration, the iodoform is most valuable applied in powders, as is also true of all ulcerated syphilides, and indeed it may be said of all syphilitic ulcerations.

In soft chancres or simple chancroids, if there be but little suppuration, the doctor, without previous cauterization, washes simply with ordinary water, applies a pinch of powdered iodoform, and wraps the part up in linen. If there be abundant suppuration, the iodoform should be preceded by detersive washes. The glycerate of iodoform on a dossil of lint is very useful in chancres of the anus. In simple bubo, iodoform ointment (2 to 30) may be applied before suppuration; powdered iodoform afterwards. In phagedenic chancre iodoform is of no use, unless after free use of caustic.

The above summary comprises the most interesting points of Dr. Damon's excellent translation.

In a more recent graduation thesis M. Guignière confirms the results, and, *inter alia*, notes a case of toothache in which immediate and permanent relief followed the application of powdered iodoform to the painful tooth.

A System of Oral Surgery. By Jas. E. Garretson, M.D. Philadelphia: J. B. Lippincott & Co. 1873.

This very handsome volume of over 1000 pages is at once an outgrowth from, and a sign of, the high place dentistry is gaining in this country, as a specialty which ought to have ere this a position among the various departments of medicine. As the author states in his preface, the work bridges the hiatus between surgery and dentistry, showing that the latter is really a branch of the former, and affording a complete exposition of all dental or oral surgery.

There has been great need for such a book, and the present volume appears to completely satisfy that need. Very wide in its scope, full in all its details, it contains all the practical information wanted by the specialist, and will no doubt place American dentistry still more firmly in its position of pre-eminence.

The present second edition is so much enlarged and rewritten that it is in reality a new book, and as such we conceive a necessary article of furniture for every dental office.

The neatness of the mechanical execution is in accord with the general style of the books published by J. B. Lippincott & Co., and the illustrations, new and old, are well selected and executed.

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. By William Roberts, M.D. Second American Edition, from the Second London Edition. Philadelphia: Henry C. Lea. 1872.

The first edition of this work met with the very general approval of the medical press both in England and this country, and the appearance of the present imprint is a proof that the profession in general have endorsed their verdict. There are more original works than the present one upon diseases of the kidney, but we know of none which surpasses, if any equal it, in the completeness and breadth of its scope, in the fairness of its discussion, or in the judgment displayed both in committing and omitting. It seems to us to represent clearly and fully the general professional knowledge on the subject of which it treats, and we commend it most heartily to every practitioner who is so placed as to desire a single monograph to guide him at the bed-side, as being probably the most complete and safest book of the kind in the language. The fact that such a work originated in Manchester speaks well for the "provincial practitioners" of Great Britain, and we are not sure that some of Dr. Roberts' London brethren will not have to look well to their laurels.

General and Differential Diagnosis of Ovarian Tumors, with special Reference to the Operation of Ovariotomy. By Washington L. Atlee. J. B. Lippincott & Co. 1873.

We venture to make the prediction that this work of Dr. Atlee will take a place among the classical literature of the profession, to be sought after half a century hence, and if he does not allow too many copies to be published, to be a bone of contention among bidders at auction sales, long after the author has passed away.

We judge this, not because the book has no faults, but because it is original—the record of an experience new to the world—and will be a veritable organic part of the early history of one of the longest scouted major operations of surgery.

The very originality of it, however, perhaps lessens somewhat its value to the man whose income, really or in his thought, allows him to purchase but few books, because such an individual wants his books to represent the Universal Medical Knowledge—which the work of Dr. Atlee does not, it being emphatically a *personal* record. It is a matter of sincere congratulation that such books are beginning to appear in American medical literature, and we hope ere long their number may be legion.

NEW REMEDIES.

THERAPEUTICS.

ABSTRACT OF THE SECOND REPORT OF THE NITROUS OXIDE COMMITTEE OF THE ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Dr. Frankland, Mr. Coleman, and Mr. Braine were appointed to carry out individually experiments to ascertain, if possible, the physiological action of the gas. The conclusions which the two first named gentlemen consider deducible from their investigations are given in the report.

With regard to the question whether nitrous oxide is decomposed when it is respired, a series of experiments were made by Dr. Frankland on a young and tame rabbit, and the results are given. Although the results do not admit of being used for the absolute solution of the problem proposed, nevertheless—as the observation of a manometer showed that the gases suffered but a very small diminution of volume during respiration—they may, the experimenter thinks, be safely taken as proving that not more than a very small proportion of nitrous oxide, if any, was decomposed, since the percentage proportion of this gas underwent no diminution during the progress of respiration. It was also shown, Dr. Frankland believes, by his experiments, that nearly the whole of the oxygen absorbed by the animal was employed in the oxidation of carbon; that the united volumes of nitrogen and nitrous oxide suffered a corresponding slight augmen-

tation; and, thirdly, that the volume of nitrogen in the mixed gases experienced an apparent slight reduction during their use in respiration, whilst that of nitrous oxide underwent a slightly greater increase. But, with regard to the last results, Dr. Frankland admits that they may be considered within the limits of experimental error.

Mr. Coleman proceeded also to determine the question whether nitrous oxide was or was not decomposed when respired. He deduces from his experiments made on the expired air of the human subject, the conclusion that, if nitrous oxide gas be at all decomposed in the blood, it must be only in very small quantities.

The majority of the Committee adopt the opinions advanced by these two gentlemen, and recommend that, in the event of alarming symptoms presenting themselves during the administration of the gas, it be immediately suspended, and no impediment be offered to the free admission of air into the lungs.

Prolongation of the anæsthesia, the Committee state, may be accomplished in mouth operations by "a nose-piece," and by throwing a jet of gas into the mouth at each inspiration while the operation is proceeding, the nose being kept closed by a spring clip; in operations on other parts of the body, by checking and re-supplying the gas through the face-piece from time time, as circumstances may require, insensibility can be kept up for several minutes; and the Committee direct the attention of surgeons to this fact especially, because many accidents have lately occurred from the administration of chloroform. The Committee point out the great improvements carried out in the administration of nitrous oxide, and in its storing and liquefaction.

The Committee have now in their possession the records of 58,000 cases in which the gas has been administered in this country. This extended experience enables them to add that the occasional occurrence of vomiting, hysteria, etc., which occur under the influence of the gas have been less manifested than usual, from the better administration and the purer character of the gas.

Its mode of producing death they believe invariably to commence at the lungs, and that artificial respiration will resuscitate the animal as long as the heart continues beating. Nitrous oxide mixed with chloroform did not answer in the hands of the Committee; but the latter as an adjunct was found to be of service in special circumstances.

The Committee complete their report by expressing their firm conviction that nitrous oxide is the safest anæsthetic known, and that not a single fatal case has occurred which can be fairly attributed to its action.—*British Medical.*

CASTANEA VESCA IN WHOOPING-COUGH.

Dr. Thomas D. Davis, formerly resident physician in the Philadelphia Hospital, has made, under Dr. J. S. Parry's superintendence, a careful study of the value of chestnut leaves in whooping-cough. He used Prof. Maisch's fluid extract in doses of f. ʒ ss. to f. ʒ i. every three hours, for a child six years old. He says (*Philadelphia Medical Times*, December 28, 1872), *inter alia* :—

On two days before using the chestnut leaves all medication was stopped. The disease immediately increased, both in the number and severity of the paroxysms. The children were all otherwise healthy, and between four and seven years of age. I have tabulated the cases, so that there can be seen at a glance the number of paroxysms in each case while on the use of belladonna, without it, and for five days after using the other remedy:—

Number of Cases.	Paroxysms using Belladonna.	Without Medicine.		Using Fluid Extract Castanea Vesca.				
		1st day.	2d day.	1st day.	2d day.	3d day.	4th day.	5th day.
1	16	20	27	19	11	9	5	2
2	14	24	24	20	9	4	4	2
3	13	13	17	12	5	4	1	1
4	12	16	20	10	6	3	2	0
5	12	18	18	7	4	5	2	1
6	12	15	20	9	5	3	1	2
7	11	11	18	6	4	2	1	0
8	10	9	12	7	2	0	1	0
9	9	12	13	5	4	2	1	0
10	7	9	10	2	2	2	0	0
11	7	8	15	4	3	1	0	0
12	5	6	10	3	1	1	0	0
13	5	7	6	2	0	0	0	0
14	3	4	4	3	1	0	0	0
15	2	4	5	4	2	0	0	0

In this table the cases are arranged in the order of their severity while on the use of belladonna. The first eleven cases all had the characteristic whoop; the remainder had well-marked paroxysms, but not the full spasm, and they recovered without having it. In each case the violence of the spasm was reduced even more markedly than the number of the paroxysms. On the days on which the cases are marked as having no paroxysms, they had slight coughs, but no sign of spasm whatever. The castanea was continued for a week, after which, in a few cases, a simple expectorant was given. The

nurse in charge, who had witnessed many epidemics of the disease, declared she had never seen a medicine act like it.

THE MEDICINAL PROPERTIES OF THE COW-TREE OF SOUTH AMERICA.

BY JOHN R. JACKSON, A. L. S.

The presence of milky juices in plants is not uncommon; indeed, it is a character of many natural orders. The juices of some of the milk-yielding trees, however, do not solidify, and they are used as an article of food. Perhaps the best known of these trees is that referred to *Brosimum galactodendron*, Don. It grows in large forests on the mountains of Cariaco, and in other parts of the sea-coast of Venezuela. It forms a tree frequently over 100 feet and often running to a height of 60 or 70 feet before branching. The milk, which is obtained by making incisions in the trunk, is said to have a very agreeable taste, somewhat resembling that of sweet cream, and a slightly balsamic odor; the only unpleasant feature about it is that it is somewhat glutinous, but it is very nourishing and perfectly wholesome.

Tabernæmontana utilis, Arn., known as the Hya-Hya, or Cow-tree of British Guiana, likewise yields a milky juice, which is perfectly bland and wholesome, though the general characters of the order are poisonous and acrid. The tree is tapped to obtain the milk. The milk, or Cow-tree of Para, known as the Massaranduba, has been referred to *Mimusops elata*, Allem; but its determination is doubtful, though there is no question of its belonging to the natural order Sapotaceæ. The milk, which flows slowly from the wounded bark, resembles good cream in consistence, but it is said to be too viscid to be a safe article of food.

Certainly, the most important in a pharmaceutical point of view of all the Cow-trees is the *Clusia galactodendron* of Desvaux. The tree has a thick bark covered with rough tubercles, and bears leaves of an obovate form and about three inches long. It is a native of Venezuela, but is also found in the Cauca Valley, north of the State of Antioquia, on the banks of the Abraeto river and on the Pacific coast as far as Tumaco.

Many interesting accounts have been given of this tree, but the following notes from a letter on the subject, written by Mr. R. B. White, of Medellin, are the most comprehensive. The tree, it appears, has a decided partiality for certain localities, and there can be no doubt that

while it needs the warm, damp climate of the Choco, it likes good drainage, as it is always found on the low ridges just rising off the plains; mean temperature 27° to 30° Cent., and never exceeds 200 metres above the level of the sea. The general utility of the milk of this tree is well known, but its most valuable property has been quite overlooked,—that of curing dysentery. It contains a resinous and an astringent principle, and an aromatic and tonic substance. The action of this combination is mechanical so far as relates to the resin, which no doubt coats the intestines with a thin film and allays irritation; and, secondly, it is astringent, tonic, and antispasmodic. So far a knowledge of the constituents of this milk would lead one thus to judge theoretically of its action. With regard to practice, no other medicine is used in the Choco and on the Pacific coast of New Granada for dysentery; and this disease is thought little or nothing of, as it is so easily cured. The milk is to be procured everywhere, and is generally sold at from one to two dollars per bottle. Mr. White says: "For upwards of two years I saw it constantly used amongst the workmen employed on the Buena Ventura Road, Pacific Coast, and in the most unhealthy climate. We had at times from 500 to 700 men employed, and out of numberless cases of severe dysentery I never knew of a fatal case, and I have seen cures effected when the cases had gone so far as to seem hopeless. As a general illustration of its action, and method adopted of using it, I will refer to my own case. I was attacked with diarrhœa, which in two days passed into dysentery, very severe. In a short space of twelve hours I was reduced to a state of utter prostration, suffering the most excruciating pains imaginable. The bloody discharge was so terrible that it seemed easy to predict death within a few hours; not a shadow of a medicine was to be had, as I was in a hut in the woods, and the violent phase of the disease was only developed at nightfall, and thus I passed the night in a helpless state. At daybreak the wife of one of our inspectors was called in as nurse, and by 9 o'clock 'leche de vaca' was procured. Up to this time I had been getting rapidly worse, and was then hardly conscious. The milk was given to me (a tablespoonful in a glass of water with a little sugar) every half-hour till 12 o'clock mid-day, and at this hour I was perfectly free from dysentery or the slightest symptom of it. Broths and light food were then given to me for a few days, and I was restored to perfect health without taking any more milk or other medicine, and without having the least recurrence of symptoms of dysentery. I have seen many severe cases successfully treated in this way, but none more severe than my own, and am sure that no medicine or known system of treatment can be so efficacious as the leche de vaca treatment.

"Admitting the fact of its power to cure dysentery, a little reflection will convince one that the composition of this milk is wonderfully calculated to produce the results I have stated. The only question is, can it be used otherwise than in a fresh state? Up to a certain period I can answer this question in the affirmative. The milk, even when corked in a bottle, soon turns sour and coagulates, but this, for many months at least, does not impair its efficacy. It is possible that if putrefaction ultimately ensues, the milk will lose its properties. It is also possible that in certain cases the sourness of the milk would be prejudicial, but I do not see why this should not be remedied by the addition of some inoffensive alkali."

Mr. White says he has some milk which he brought himself from the Choco, which has been contained in a bottle for more than a year and a half, and is apparently as good as ever. One of the great advantages of the use of this milk in dysentery is the radical cure it effects. Its tonic and astringent properties appear to be brought into play as they are required; and as the resinous principle first serves as a palliative, the antispasmodic, tonic, and astringent properties work out the cure.

Mr. White's opinion of the medicinal properties of this milk is so favorable that he concludes his notes by saying that he cannot but think that, in combination with other medicines, it might serve as a base for successful treatment of cholera.

It has been said that a single tree will yield as much as a quart in an hour.—*Pharmaceutical Journal.*

THE HOT SAND-BATH.

BY DR. CONRADE.

Sand, like most minerals, is a bad conductor of heat—the more so from being composed of small incoherent particles. It possesses a high specific heat—that is to say, a large capacity of retaining heat, without allowing it to escape but slowly. The use of hot sand for baths forms a part of popular medicine in southern countries in which the mineral is abundant. By embedding the whole body or some of its parts in hot sand, we expose them to the action of the heat stored up in that medium. If not exposed to contact with substances of a low temperature, the quantity of sand required for a bath may be expected to retain its heat nearly unchanged for more than an hour. In the hot sand-bath, the layers used for surrounding the body are generally covered by other sand of much higher degrees of tempera-

ture (120 to 130 deg. Fahr. or more). These not only steady the heat round the body, but increase it gradually, without inconvenience to the patient. Over all is laid a blanket, which prevents too rapid cooling by the influence of the outer temperature.

The known effects of high temperatures on the body consist chiefly of the relaxation of all tissues and the enlargement of the blood-vessels, which become more filled with blood without any increase in the pressure. The flow of the blood in the neighboring structures is therefore directed to the heated parts, relieving the former ones of as much of their contents as the increased space in the enlarged vessels will allow. If the whole skin be subjected to the heat, the circulation is drawn to the surface and the inner organs get rid of certainly not a small quantity of blood during the bath, provided the elasticity of the interior blood-vessels be normal. This relief, however, can no longer take place when the heat gets easy access to the inner parts as well. The influence of the heat soon becomes universal, and disturbances in the respiration and in the action of the heart will unavoidably follow. The described effects may be properly divided into —A, those exercised on the heated parts; and B, those produced on the neighboring parts.

A. The heated parts (1) become more filled with blood, and (2) have an increase in the secretion of liquid matter from the blood; consisting chiefly, but probably not entirely, of water.

B. In the adjacent parts (*a*), those nearer to the heart, the blood-vessels are relieved; (*b*) in those remote from it, the fluidity of the blood is diminished.

To a certain extent it depends on the method of treatment adopted which of these results will be obtained in the first place. In case of high degrees of heat being resorted to, much perspiration will follow; while lower temperatures, applied for a longer time upon a large surface, are more apt to spread towards the inner parts, and thus the described effect upon the distribution of the blood and its consequences may be presumed to be the most prominent result. In taking sand as a vehicle for the application of heat, no other complications will arise; the respiration remains undisturbed, the heat not entering the lungs; the circulation, too, goes on as usual, the action of the heart not being interfered with. No congestion of any kind will intervene; no palpitations, no headache, etc., follow. The skin, not being excluded from contact with the air, perspires freely, does not become softened, and does not lose its former resistance to the influence of the weather, and is still protected from draught and cold. The patient, whilst undergoing his treatment, may enjoy in the mean time the comforts of rest and sleep.

The advantages of the use of hot sand consist simply in its allowing the application of heat entirely free from any of the complications which more or less accompany all other methods. Water excludes the air hermetically, prevents perspiration, and overcharges the kidneys during the stay in the bath. It cannot be supported as hot as sand can without feelings of uneasiness, and, besides, it has a weakening and softening influence upon the skin. Steam and hot air baths are not very fit for patients at all; they require already a certain strength to resist the influence which they exercise upon everybody at the beginning. They interfere too much with respiration and circulation to allow their continuance for the purpose of cure. Delicate persons and children are entirely unable to make use of them. They increase the general temperature of the body by two degrees and more, thus causing a sort of artificial fever. None of these inconveniences occur in the hot sand-bath, if applied with sufficient care and experience.

From the foregoing, it will appear that the diseases in which the application of heat by the aid of sand can be tried with hope of success, are of two classes: in the first class, to bring about a large perspiration is the chief object; in the second class, perspiration is better avoided, and the effect of the heat to be directed towards correcting the circulation and restoring the vital processes. Under the first head are comprised rheumatism and gout (in which Trousseau appears to have employed this treatment long since), exudations, and œdemata from previous disorders, which will probably all derive benefit from heat. Under the second head we will enumerate morbus Brightii (the acute stage of course excepted); cases of recent paresis, which may be improved if the lesion be not the result of some disorganization on the part of the nerve, be it by removing some injurious swelling pressing upon the nerve, or by improving its vegetative condition. That, of course, the diagnosis must decide, and the case has to be treated according to it. The same remarks apply to recent cases of partial atrophy, of not too long duration. In cases of scanty catamenia, in irregularities in the flow, dysmenorrhœa, and similar complaints, if not due to coexisting anæmia, experience has shown in many instances that cases of that sort improve much better under the hot sand-bath than after any other treatment. Scrofula and rickets derive great benefit from carefully administered hot sand-baths. Torpid ulcers and badly healing wounds improve wonderfully sometimes after a few applications.

Perhaps in some kinds of chronic exanthemata the hot sand-bath might be of good service, although no experiments have been made on this topic as yet. It speaks very much in favor of the hot sand,

that, whenever judiciously given, the patient likes it, and has recourse to it in many cases.

Further information on the subject will be found in the following:—Dr. Schwabe, *Deutsche Klinik*, 1869, No. 33 (being a report of a medical man, himself a patient). Dr. Flemming, *ibid.*, 1868, Nos. 12, 14; 1870, Nos. 35–38. Dr. Sturm, *Zeitschrift für Medicin*, by Küchenmeister, 1867, p. 293 *et seq.;* and 1868, p. 241. Trousseau's *Clinique de l'Hôtel-Dieu*, ed. ii, vol. iii, pp. 380, 381. *Archives Générales de Médecine*, 1856, p. 307. Schmidt's *Jahrbücher der Medicin*, vol. 133, p. 62. Dr. Flemming, of Dresden, enters into a minute comparison of the different methods of utilizing heat as a therapeutic agent.—*British Medical Journal.*

PHOSPHORUS AS A NERVE TONIC.

In the course of a paper upon the results of overwork, read before the London Medical Society, Dr. Routh said: The symptoms of mental decay resemble the gradual changes that come over old people, and yet are very similar also to those induced by venereal excesses in both sexes, except that in the latter there are symptoms of spermatorrhœa, which are absent in cases suffering from overwork. In both cases the tendency is to the production of idiocy from softening of the brain and insanity. He said there was reason to believe that the immediate cause of these symptoms was, deficiency of phosphorus in the brain, and endeavored to prove this by considering *seriatim* the following points:—1st. It is proved chemically that a man grows older and mentally weaker, or becomes idiotic, as the brain contains less phosphorus; this was shown by the analyses of Hentier. 2d. The solidity of the brain in a measure depended upon protagon, a phosphoric compound, and those foods which were richest in phosphorus were found by experience to renovate most speedily weakened brain power, such as shell-fish and fish generally. 3d. The assertion made by some that phosphorus could only be assimilated by previous conversion into phosphoric acid was combated, the effects of the two being shown to be perfectly different, phosphoric acid producing, in large doses, fatty degeneration of the heart, liver, and kidney, whereas phosphorus produced necrosis of the jaw-bone, and excited the nervous and sexual systems. The opinion of Dr. Von Bibra was also quoted in evidence of this. Phosphorus also reduced or removed congestion of the brain. 4th. Dr. Routh next showed that those diseases produced by softening of nervous matter were precisely those which were cured often-

times by the internal administration of phosphorus, viz., some forms of paralysis, eczema, and other skin affections, cerebral congestions, with great debility and insomnia. The authority of several writers was cited on these points,—Delpech, Prof. Fisher, of Berlin, Dr. Eames (in the Dublin Journal), Dr. Burgess, and Dr. Hammond, of New York. 5th. The special treatment indicated in these cases was next considered—1st. Complete rest of mind, especially abstention from all occupations resembling that upon which the mind has been overworked; 2d. The encouragement of any new hobby or study not in itself painful, which the patient might select; 3d. Tranquillity to the senses, which expressly gives in these cases incorrect expressions, putting only those objects before them calculated to soothe the mind; 4th. A very nourishing diet, especially of shell-fish; 5th. The internal administration of phosphorus, whether in its allotropic form or as the "Solutio Phosphori Medicati," prepared according to Dr. Hammond's formula. —*The Doctor*, for Dec. 1, 1872.

Cerebral Paresis treated with Phosphorus.—Dr. G. Tempini attributes this disease to an excessive waste of protagon ($C^{212}H^{240}N^4PhO^{11}$), generally the result of over-use of the cerebral or reproductive function. He prescribes five centigrammes of phosphorus, to be dissolved in some ether and mixed with enough powder and extract of liquorice to make a mass, which may be divided into fifty pills of twenty or twenty-five centigrammes each. Of these he gives at first one a day, increasing gradually to five a day. The limit of toleration of the remedy is often indicated by frequent alvine discharges. Meat and eggs are useful, for the phosphorus contained in them. Wine, coffee, and cold douches to head, serve as valuable stimulants. The author also recommends mild mental gymnastics.—*Gazetta Medica Italiana-Lombardia.—N. York Med. Journal*, Jan. 1873.

PHOSPHORUS IN NEURALGIA.

Phosphorus is a remedy little, if at all, employed by the regular practitioner in cases of neuralgia, though I believe frequently exhibited by the homœopath. A case, however, came under my notice some time since which so strikingly illustrates its value as to induce me to record it.

A gentleman, who had for years suffered acute and frequently recurring paroxysms of neuralgia of the chest walls, applied to me for advice. I found that he had been a regular round of London and provincial doctors, and that every plan and remedy appeared to have been tried.

I failing as signally as my predecessors, he sought aid of a homœopath, and was relieved in a very short time. I lost no time in ascertaining the remedy which had worked so speedy, and, as it proved in the sequel, so permanent a cure, and found that it consisted of the so-called mother tincture of phosphorus, of which he was ordered to take five drops on the advent of an attack, and repeat them as occasion required.

This tincture of phosphorus is a solution of phosphorus in ether, which dissolves about one per cent., so that each dose contained about one-twentieth of a grain of phosphorus,—scarcely homœopathic according to the old-fashioned notions; *mais cela va sans dire.*

Not only was the pain relieved, but the frequency of the attacks was lessened, until from suffering a seizure two or three times a week, as he had for some years, he has now been entirely free for more than four months.

Since the occurrence of this case I have frequently employed this preparation of phosphorus, and have often found it of signal service in curing neuralgia; especially, it has appeared to me, in those subjects who add to a highly nervous temperament some cause of nervous waste; so that I have considered it probable that the neuralgia has, indeed, in these cases been, as Romberg styled it, "the cry of the hungry nerve for blood," or, rather, for its own special pabulum in the blood, and that the phosphorus has directly supplied this want. I have also employed pills of phosphorus melted in suet, and coated with gelatine, a preparation recommended by Squire when phosphorus is indicated; but I have not found them to possess any advantage over the phosphoric ether, while they possess the disadvantage of being difficult of preparation, and the universal pillular drawback of doubtfulness of destination, whether of absorption into the blood or of excretion by the bowels. —*S. M. Bradley, in Lancet.*

CROTON CHLORAL.

Dr. J. W. Legg has been using this substance in St. Bartholomew's Hospital, London. He says: I gave it to about twenty persons, nearly all women. They varied in age from seventeen to forty-four. They were all suffering pains in the regions supplied by the fifth nerve,—that is, the upper and lower jaw, the face, and the supra-orbital region of the forehead. The pains were paroxysmal. In the majority of the cases they were increased at night. In nearly every one of these cases there was caries of the teeth. In about half there were signs of anæmia. The medicine was given in doses of five, ten, and twenty grains,

dissolved in water. It was given at night, just before going to bed. In one case, where the pains became aggravated at noon and at bedtime, it was given just before the increase of pain was expected. In all the patients, except two, great relief from pain followed the dose of croton chloral. Some of the patients said that they slept well after it; others, that they did not sleep, but that the pains in the head and face either ceased altogether, or were much diminished. In two cases, both women, the croton chloral was of no use whatever, the pains being aggravated during the use of the medicine; but in the rest of the cases more or less relief was given.

Should the croton chloral be as efficient in the hands of others as it has been in mine, it will prove a most important addition to the materia medica. It will enable the physician to give relief from pain until relief can be afforded by the dentist, or by attention to the general health, and this without any of the general effects of narcotics. It is almost unnecessary to dwell further upon the advantage of possessing such a means.—*Lancet.*

TREATMENT OF PARAPLEGIA DUE TO EXCESSIVE VENERY.

The following is extracted from a report, by Dr. Parish, of a clinicial lecture on chronic myelitis by Dr. H. C. Wood, Jr., as published in the *Philadelphia Medical Times.*

The form of paralysis due to excessive venery is usually that of paraplegia accompanying inflammatory softening of the cord. I have never seen a case of sclerosis thus caused. With the different stages of congestion and exhaustion, or of inflammatory change, there will be more or less marked aberrations of sensation and motion, or, in other words, more or less complete paralysis.

If you have a patient with the earlier of these symptoms, what shall be your treatment? Of course an essential part of it must be the avoidance of the original cause; for otherwise the medicinal treatment will be of no avail. The best way to effect this is to send your patient alone on a tour for a few weeks, if he be well enough. At any rate, insist upon his sleeping in another apartment from his wife, if married; as the only method of maintaining the necessary absolute abstinence is to keep out of the way of temptation.

There are some who recommend ergot in such cases, saying that it produces a contraction of the smaller blood-vessels and thus relieves

capillary congestion. Most probably it does have this effect; but I have obtained better results from the use of phosphorus than from any other remedy. As already insisted on, when the patient applies for relief the congestion has ceased to be an active one, but is passive and attended with exhaustion. Phosphorus is believed to stimulate the circulation of the cord, and to thus relieve the passive congestion. Whether this be true or not, I feel very sure that it influences the nutrition of neural structures to a greater extent than any other known drugs, not excepting strychnia. The latter is a powerful functional motor stimulant, but its power of influencing the nutrition of the cord is comparatively slight. Do not give phosphoric acid and think you are giving phosphorus. If you wanted the effects of sulphur, you would not give sulphuric acid. Be careful, too, in administering phosphorus in the pill form. Remember that the least particle of solid phosphorus coming in contact with the stomach will produce an ulcer—a not insignificant complication. Dr. Percy, of New York, has lately suggested cacao butter as a suitable vehicle. I have not put this suggestion to the test, and hence am unprepared to pronounce on its value. I have generally used an oily solution: phosphorus gr. xij. in ol. olivæ f ʒ i. Of this I begin with one minim in mist. acaciæ, and gradually increase it to three or four minims thrice daily. The effect on the stomach must be watched; and if dyspeptic symptoms show themselves you must suspend its use. This drug will be found of considerable value in other cases of perverted nerve-nutrition, such as hypochondriasis and hysteria.

Electricity is another remedy that must not be neglected in the treatment of the various degrees of paralysis following excessive venery. It is, however, doubtful if an electrical current ever reaches the spinal cord. When passed along the spine, it never produces the least muscular movements; and yet if the cord of an animal be exposed and the electrodes be applied directly to that structure, violent muscular spasms will immediately occur.

There seems to be but little doubt, however, that a continuous electrical current passed along the spine is attended with positive benefit; but the good it does is most probably due to a reflex influence on the cord.

I am very much in doubt as to the possibility of galvanizing the sympathetic nerve when unexposed. Our attempts are never attended with any of the symptoms of irritation of that structure. The pupil has never thus been made to dilate; and it is hardly reasonable to suppose that any contraction of the blood-vessels takes place, as in all experiments on the lower animals the pupil has dilated *before* the blood-vessels became contracted.

In addition to the continuous current to be passed along the spine, let the individual muscles be faradized. Sometimes you will find the muscles to respond more decidedly to a slowly interrupted or to a continuous current. I have found that this current acts most forcibly upon the muscles when, instead of being simply interrupted, the currents are quickly reversed, by means of a pole-changer, at intervals of from one to a few seconds. In this way I have often been able to get a very active response in cases in which the induced current failed entirely, and the direct or continuous current applied in the ordinary manner produced only very slight results.

There is a simple rule in making a choice of the kind of current. Use a continuous or an induced current, as the one or the other produces the most muscular response. The muscles should also be daily rubbed and thoroughly kneaded, and stimulant embrocations may often be employed with advantage; and as soon as your patient can walk, even with crutches, cause him to exercise himself thus daily, but not to such a degree as to produce fatigue.

TETANUS AND ITS TREATMENT.

Mr. C. Macnamara, Surgeon to the Native and Ophthalmic Hospitals, Calcutta, says:—

In June, 1871, I adopted a plan of treatment in tetanus which I have since consistently followed, both in Hospital and private practice. It consists in administering forty grains of hydrate of chloral (to an adult) at bed-time, and in several cases of the disease—the temperature of the body rising to upwards of 101°—an additional thirty grains of chloral is given at mid-day. The patient is made to swallow regularly every four hours about four ounces of milk, one egg being mixed with the milk, morning, noon and evening; if the pulse indicates considerable weakness, beef-tea and brandy are substituted for the milk, but it is seldom necessary to administer food of this description. Milk and eggs, with arrow-root as the patient improves, is the diet which I almost uniformly order, it may be for twenty or twenty-five consecutive days. By pursuing a plan of this kind I came to learn that tetanus (among the natives of this part of India) is by no means so formidable a complaint as it was generally supposed to be; it has undoubtedly a tendency, as we have long known, to run a course of some twenty or twenty-five days; and further, if we can only carry our patient through the first ten days of his illness, as a rule, a very favorable prognosis may be given of his recovery.

Of the twenty cases of tetanus above referred to, no less than seventeen have recovered under this treatment, an unprecedented result, I believe, in the annals of the disease. These twenty cases were not picked; they were taken one after the other as they came into my wards, and constituted the entire number of patients, from June, 1871, to June, 1872, suffering from the disease in the Calcutta Native Hospital; some of them seemed in a desperate state when first admitted under my care. I still think that chloral has no power in diminishing the severity of the fits in tetanus, but it doubtless renders them less frequent, affording the patient rest and time to sleep; and this, together with a diet such as above noticed, has brought about the remarkable result of seventeen instances of recovery out of twenty cases of tetanus.

I am strongly opposed to the system of frequently repeated doses of chloral in tetanus, however violent the spasms, if the temperature of the body keeps below 101°: only one draught containing forty grains of this drug should be given; and I feel almost certain that, however bad the case may be, if an extra dose of thirty grains of chloral is administered during the day, we gain all the advantages in the treatment of tetanus that chloral can afford us. It seems that if the medicine be pressed further it is likely to endanger the patient's life, and a too prolonged sleep has appeared from time to time to be followed by a tetanic fit of such extreme violence as to kill the patient. It does not of course follow that because forty grains of chloral only puts a patient suffering from tetanus to sleep for a few hours we are to repeat the dose too soon; rather allow time for the drug to pass out of his system or become otherwise disposed of before again administering the medicine, otherwise the chloral or its derivatives may accumulate in the blood and ultimately poison the patient.—*London Practitioner*, Nov., 1872.

FARADIZATION FOR THE ALBUMINURIA OF DIPHTHERIA.

Dr. R. Browning has a paper on Diphtheritic Albuminuria (*British Medical*, July, 1872), in which he gives the details of seven cases, and concludes as follows:—

f. That albuminuria, in any quantity, is due to obstruction of circulation through the kidneys, caused by congestion of the Malpighian tufts, this congestion being produced by paralysis of the nerves supplied to them; but that a mere trace only arises, either from pus or else blood-corpuscles, which have casually entered the volume of urine.

g. That the indication of treatment, in albuminuria occurring to an appreciable degree during the progress of a case of diphtheria, is to remove this obstruction by overcoming the paralysis, and that local Faradization (over the lumbar regions, along the lower parts of the spine, and as near as may be in the direction of the ureters) affords the best method of doing so.

h. That, after albumen has disappeared from the urine, it may return, synchronously with a relapse of diphtheria; and that throughout the whole course of this malady little, if any help, is derived from the use of the clinical thermometer.

Both the cases which terminated fatally were those in which no Faradization was employed, and *five* others, all of very serious nature, recovered after it was resorted to; *all* were marked by unmistakable evidence of blood-poisoning, and albuminuria, with more or less suppression of urine, was noticed in each. The treatment of all was conducted on the same principle, *plus* or *minus* the induction-coil; the object aimed at being at first, during the premonitory symptoms, to regulate the secretions, and then to support the strength of the system in every possible way. My sheet-anchor was the tincture of perchloride of iron, sometimes combined with glycerine, sometimes with chlorate of potash, and sometimes given *per se*. Stimulants and nourishment in every variety were freely given.

BELLADONNA IN SWEATING.

Dr. Sidney Ringer has a paper on the above subject in the *London Practitioner* for August, in which he commends most highly the use of belladonna both locally and internally. He says, *inter alia*:—The writer has many times checked the sweating of the head and face of young children, often so profuse as to soak their hair and the pillow on which they have been sleeping. Again, belladonna, by means of the ointment or liniment rubbed in two or three times a day, has several times checked the profuse sweating of the hands, which is sometimes so copious as to run off them in drops, and is especially noticeable at the finger-tips and thumb-balls. Sometimes the good effects are permanent, sometimes the sweating may not return for a considerable time; but occasionally, however, this treatment fails.

Some very striking experiments are detailed, among them the following:—To a middle-aged woman suffering from acute rheumatism, a hot-air bath was administered, followed by cold sponging. This treatment caused her to sweat so freely that, for several hours after, the perspiration continued to pour down her face, soaking her clothes

and the bed-linen. While in this state, $\frac{1}{100}$ of a grain of atropia was subcutaneously injected into her arm, and in about a minute the perspiration ceased, and for two hours her skin continued dry and she felt much cooler, but in the evening rather free perspiration returned. We next gave a young man a Turkish bath, and Mr. Johnson, the resident assistant of wards, who has helped me in these observations, joined him in the hot chamber. Both sweated freely, and then each was injected with $\frac{1}{100}$ of a grain of atropia, and in a little more than a minute the skin became dry, and the perspiration did not return after the application of the cold douche, nor afterward. Mr. Johnson remarked that, so dry did his skin seem, that he felt he should never sweat again. They both suffered from much dryness of the mouth, but their pupils were not dilated. We next placed a boy in the hot-air bath, the temperature rising to 180° Fahr., and when sweating freely we injected $\frac{1}{120}$ of a grain of atropia, and almost immediately the sweating ceased and did not return.

THE TREATMENT OF ACNE.

On October 17, of last year, Dr. L. D. Bulkley read a paper before the New York Academy of Medicine on Acne, which, with the subsequent discussion, was published in the December and February numbers of the *American Practitioner*. From these the following is taken:—

Dr. Bulkley says:—I feel that I can not too strongly insist on this, that the very large proportion of cutaneous affections, and acne most of all, are but diseases of the whole economy, and should not be studied exclusively from a local point of view.

The various forms of acne require somewhat different treatment, although most of these are but modifications of one plan to suit the slightly different local states. The plan is a regulative and tonic treatment internally, inducing as far as possible a perfect working of the bowels, kidneys, skin, and other organs; supplementary to which the local treatment should be soothing in acute inflammatory states, and slightly stimulant and astringent in others. The first obstacle, the removal of which is absolutely necessary for the cure of acne, is constipation.

This constipation must be overcome; for, as Tilbury Fox expresses it, "this preparation is a *sine qua non*." And this is to be accomplished not by purgatives, in the vulgar sense of the word—for these sometimes have a very injurious effect on acne, the eruption becoming

worse as the bowels are more and more irritated by stimulating cathartics, an effect which I have seen also in eczema—but by a careful employment of all the means at our command, by medicine, and far more important, by diet, exercise, and regularity in attending to the calls of nature. Regular daily exercise in the open air, always short of fatigue, is well-nigh essential; and this I find to be one of the most difficult points to carry, but one which always gives the best results. But generally some medicine will be called for to assist in this process, but all laxative medicines should be discontinued as soon as possible; their continuance and abuse being one of the grounds why the internal treatment of acne has fallen into disrepute. The remedy I have had most success with is a pill containing one-half a grain of extract of aloes and one grain of dried sulphate of iron, with a little confection of roses. A small quantity of opium or belladonna may be added if it gives pain. One of these pills is given after eating, sometimes two being required after the noon meal. In a few days the bowels are loosened; and if the pills be continued at this rate a diarrhœa will generally ensue, succeeded, when they are withheld, by constipation, and any benefit derived from them will be lost. The frequency with which the pills are given, after the bowels become at all lax, must depend on the frequency of the evacuation. We usually omit first the noon pill, then the morning one, and soon the patient takes one but every other evening; finally, *one* taken once a week, or once in two weeks, will have considerable laxative effect. Should they be required again, the same process of accustoming the system to act without them should be followed. Taken in this way the pills will often correct menstrual difficulties, except, of course, when dependent upon mechanical causes, as displacements, version, etc.

Another remedy which has been followed with success, rather in my father's practice than in my own, is Kissingen water, and I would mention Hanbury Smith's in particular. This is given, one-half to one pint, before breakfast daily, or it answers well if taken in the middle of the forenoon. I do not consider that the benefit derived from this water is wholly owing to its purgative properties; for with many these are quite weak, and the improvement following its employment seems not at all proportioned to its action on the bowels, though its ultimate effect is to leave them regular.

Most cases require an immediate laxative, and one of the best I find to be the old pill of two and a half grains each of blue mass and compound extract of colocynth, with a quarter of a grain of powdered ipecac; two such to be taken alternate nights for a few times, followed by Kissingen in the morning, and surely nothing I know of makes more impression on some cases of acne for the time being.

But a second element, quite as important in the treatment of the disease before us, is *dyspepsia*, which enters very largely as an exciting cause in all dermal affections. This is in many cases dependent on, or conversely productive of, the last condition considered—constipation—and is often remedied by the treatment already given.

The dyspepsia associated with acne is mostly of the acid kind, and this is to be met in two ways. First—and this is by far the most important—by a proper regulation of the diet. In this the patients will require a large amount of instruction and watching. The most essential restriction in this respect is in the use of starch and sugar in all their forms, and for this suggestion I am indebted to my friend, Dr. William H. Draper, of this city. The advantages gained by moderation in the use of these principles I have verified again and again in practice; so that now it is almost a routine direction to patients with acne that they limit themselves in the use of farinaceous and saccharine substances, and I find that they are frequently relieved of much annoyance thereby, and are very grateful for the advice. With these articles I also proscribe totally the use of wine in any shape, and all fermented liquors—ale, lager-beer, etc.—as these, I believe, assist largely in the acid state of the system so common in these subjects. I do not think it is the alcohol in these beverages which does the mischief; for although acne is often attributed to the abuse of liquor, and the rosaceous form is common in drunkards, we know that their digestive organs are generally at fault; also that those who drink the most gin are quite apt to drink ale besides. It is, I am led to conclude, the fermentative principle—the starchy product in the one instance, and the saccharine in the other—which is lost after distillation; and I have repeatedly known alcohol to be borne well when vinous and malt liquors have increased the difficulty. So that when stimulation is necessary I do not hesitate to give alcohol, either in bitter tinctures or brandy or whiskey (when it is safe to prescribe them), in small quantities, *with the meals;* but on no account do I allow ales or wines to be used. One of the worst cases of acne indurata I ever saw was in a lady who had for some time been taking ale with cod-liver oil, by the direction of her former physician, with great increase of the eruption. Now cod-liver oil alone will benefit acne as a rule. I have never known it to aggravate the disease. A gentleman, aged about sixty years, somewhat given to the use of port wine, came under my care for acne rosacea of the forehead. Treatment proved unavailing until the wine was abandoned, when the eruption disappeared under the same measures as before; and he has had no return of his trouble for more than a year, he abstaining from wine, but with no other treatment.

Coffee in large quantity, and tea drank to excess, has some effect in

heightening the disease; but a very moderate use, especially of the former, is beneficial. Chocolate and cocoa are exceedingly hurtful, and should be interdicted. Among other articles which I find noted as having produced exacerbations or even returns of acne are pastry, fried substances, salted meats, pickles, sweet potatoes, macaroni, and milk—this latter, however, only exceptionally. In one patient strawberries and pine-apples occasioned a severe outbreak of a very dormant acne rosacea.

Electricity, so far as it cures the dyspepsia, is beneficial in acne; but, from what I learn, has not been of service when applied directly to the eruptive surface, but in some cases the reverse.

I do not think that this disease is benefited in its early stages by arsenic or cantharides, but know the reverse to be true in certain cases. I do, however, value arsenic very late in the disease, when the eruption is about gone, to secure a perfect result; for I believe it gives tone and vitality to the skin, which enables it to secrete and pour out its sebaceous matter in a proper manner.

Much improvement is obtained, for a season, from the acetate of potassa with a bitter infusion, taraxacum or rumex, three times a day, between meals, largely diluted. But this must be followed up by tonics, together with regulation of the diet, exercise, and bodily functions, to be permanently useful. The mineral acids are very serviceable, and iron, nux vomica and bark, with small doses of arsenic and a proper local treatment, are necessary to complete the cure. I say cure rightly, I believe, for the disease can be removed, and if proper precautions are observed need not return, in many cases at least. Cod-liver oil and iodide of iron are required in the scrofulous, and a mild mercurial course will at times remove the eruption after the failure of other means. This is, of course, necessary in true syphilitic acne.

I have used the glycerine treatment recommended by Gubler, of Paris, in one case with remarkable success. Three other patients are taking it, whom I have not seen since I prescribed it for them, quite lately. It is simply one, two, or more teaspoonfuls of pure glycerine, colored and flavored, given internally three times a day after meals, no other treatment, internal or external, being employed, nor any restriction in diet. No satisfactory explanation of its action has yet been given.

As to local measures, many patients were treated almost exclusively with the means above described, topical applications being entirely secondary. Unquestionably, however, we can do much in hastening the cure by some of the washes and ointments with which the books abound. My favorite local application is a wash consisting of a

drachm each of sulphuret of potassium and sulphate of zinc in four ounces of rose-water. It is useful in almost all states and forms of acne, although it sometimes disagrees. The lead and opium wash acts very pleasantly when there is much inflammation present, and the iodide of lead in stramonium ointment serves well to reduce the thickening of the tubercles of acne indurata. I have seen improvement follow the application of citrine ointment thrice diluted with cold cream. I have applied collodion to endeavor to contract the dilated veins of acne rosacea, but without lasting effect. I have also laid open the veins in the same form with good results in some cases. I do not find the benefit I had hoped from bichloride of mercury wash. Juniper-tar soap is very useful in acne sebacea, punctata, and indolent forms of acne simplex.

It is best to press out the plugs of sebum from the comedones as much as possible, thus avoiding foci of inflammation; also to open such nodules as contain an appreciable amount of pus early, otherwise the tissue is destroyed subcutaneously and scars left.

After Dr. Bulkley had read a synopsis of his paper on acne, Dr. Weisse, who was called upon to open the discussion, said:—

As to the treatment of simple acne, it is most successful in early life; but must be continued, as a rule, four or five years—certainly till after the age of twenty—to make the cure permanent. Emptying the distended follicles he regarded by far the most important element of treatment. This is to be done after the application of very hot water to the face, three times a day, for ten or fifteen minutes. Soap should be avoided, as also too frequent ablution.

Acne rosacea, he stated, is frequently dependent upon sexual difficulties, and is often cured by marriage. The use of fatty matter should be encouraged, and this may be added to the diet or given as medicine, as half a pint of cream daily, glycerine, cod-liver oil, or even olive oil. As local applications, Dr. W. advises any greasy application, even simple suet, scented, to be applied at night after the hot douche, followed by squeezing the masses from the follicles. In the morning the fatty matter is still left on, the face not washed, but a powder of equal parts of subnitrate of bismuth and prepared chalk is dusted on, and removed by lightly brushing the face. Hebra employs a very weak ointment of the bichloride of mercury. The speaker had also used an ointment as follows:—

℞ Pulv. camph., ... gr. v.
Sulph. flor., ... ʒ ss–i.
Ung. simpl., ... ʒ i. M.

He considers acne rosacea thoroughly amenable to treatment. He

had pressed arsenic to a toxic effect, and kept it up for six weeks, without any benefit in this disease. He had seen, however, good effects from the cod-liver oil.

Dr. J. C. Peters said arsenic is injurious in the acute inflammatory stages, and is only useful in long-standing and torpid cases. He esteems acetate of potassa as one of the most useful remedies in this disease; borax given internally being almost as good, and having this advantage, that it may relieve amenorrhœa at the same time. Borax is also valuable externally. He has seen good results follow the internal administration of tar, five to ten grains, with aloes. Sulphur given internally is also serviceable in some cases. Muriate of ammonia assists at all times by its action on the liver. Sulphate of potash and corrosive sublimate are injurious in acute cases. He had been disappointed in the wash recommended by Sidney Ringer, composed of lac sulphur, ʒ i.; glycerine, ʒ i.; aquæ, ʒ iv.

Dr. B. Howard said his indications for treatment were: keep the skin of the whole body, especially the face, soft and flexible, to give free exit to the sebaceous secretion. Constipation is an important element, and must be avoided. His favorite remedy, which he would recommend very highly, and which he almost considered *the remedy*, was bitartrate of potash. This is to be given, morning and night, in sufficient quantity just to secure a free action of the bowels—often about half a drachm. He has also seen good success from rhubarb and soda powders. He is very careful about giving arsenic in these troubles.

Dr. E. L. Keyes said the treatment, he thought, should depend upon the cause, taking largely into consideration the scrofulous and gouty diathesis. When a gouty habit of body exists, continued exercise is very necessary. Arsenic is useful only when it is well digested; it aggravates some cases. Locally, he uses hot water, with an alkali, as bicarbonate of soda, a drachm to the pint, rubbing the face afterward violently with a soft towel. Bichloride of mercury is favorable in mild cases, in strength varying from one to two or even five grains to the ounce. Benefit may also be obtained from a solution of half a grain to the ounce.

The speaker, however, dwelt much more on the internal cause of acne, intestinal and stomach derangement, and the consequent necessity of judicious medical treatment, emphasizing the value of out-door exercise. He places much less faith in local remedies.

Dr. R. W. Taylor said as to treatment, the acetate of potash regulates the stomach troubles very well, neutralizes the urates, etc. Locally, he thinks that active stimulation is required; and regarded the want of success following Dr. Sidney Ringer's sulphur lotion, as mentioned by

Dr. Peters, to be due to the fact that it was applied too lightly; it should be rubbed in. He is in the habit of using the following:—

℞ Potassæ fusæ, ... ʒ ii.
Aquæ, ... ʒ iv. M. ft. lotio;

to be sponged over the face, allowed to dry in if not too painful, and washed off with very hot water; then rub in an ointment, as

℞ Hydrarg. biniodid., ...gr. v.
Ung. simpl., ... ʒ i. M.

Or,

℞ Hyd. ox. rub., ... ʒ ss.
Ung. simpl., ... ʒ i. M. ft. ung.

He has also seen good results from iodide-of-sulphur ointment; also frictions with the green soap of the Germans, applying cold cream after washing it off. The following is also a favorite prescription with him:—

℞ Lac sulphuris, ... ʒ ij.
Spts. camphor, ... ʒ ij.
Aquæ, ... ʒ iv. M.

The lotion to be rubbed well in with flannel at night, washed off in the morning, and a little cold cream applied.

Dr. T. called attention to what he considered rather an unusual form of acne, in which there were small papular elevations, quite salient, about one eighth of an inch in height and breadth, around the mouths of young women. They are associated with an hypertrophy of the fibrous tissue. These he had found very rebellious to treatment, but had removed them by destroying the whole mass, boring them from the apex with a stick of Squibb's pure nitrate of silver. This leaves a minute scar, which, however, is less than that resulting if the eruption is left to itself. He had tried the actual cautery, but not with as good effect as the nitrate of silver. The speaker did not think that acne was commonly associated with sexual troubles in young women.

Treatment of Acute Odontalgia by Sub-Cutaneous Injection.—Dr. G. Dop commends most highly the hypodermic injection of chloroform in acute odontalgia and periodontitis. He introduces the point of the syringe as close as possible to the root of the offending tooth, parallel to the jaw and close to the bone; by a turn of the piston screw one drop, or at most two drops are injected. The relief is almost immediate, and lasts 18 to 20 hours.—*Revue de Théra. Med. Chir.*

Use of Diluted Pyroligneous Acid as a Gargle.—Put a teaspoonful of the acid obtained from the shops into a wine-glass of water, and direct the patient to gargle the throat frequently with it.

In the sore throat caused by exposure, so common throughout the country, it generally relieves the soreness and stiffness felt in swallowing very promptly.

In chronic inflammation, with or without ulceration, of the throat, I have found it a very valuable remedy.

In the sore throat of Scarlatina it has generally afforded a very prompt amelioration of this sympton of the disease.

In several cases of habitual tonsillitis, by using this gargle freely at the commencement of the disease, I have been able to arrest the progress of the inflammation and secure resolution.

Its use is not unpleasant; it is safe even if used for hours continuously, and has an additional advantage in removing the fœtor of the breath.—*Georgia Medical Companion.*

Caraway Seeds as a Galactagogue.—Dr. Bareste, knowing that in some parts of Europe the peasants give Caraway seed to the goats to increase their milk, conceived the idea of trying them on woman. He has prescribed them three times to nurses who had lost their milk from acute illness, with perfect success.—*Revue de Thérapeut.*, Jan. 1, 1873.

Veratrum Viride.—In the *Philadelphia Medical Times* for Jan. 18 and 25, is an elaborate paper on veratrum viride by Dr. Eugene Peugnet, which is too long for insertion here, and cannot very well be abstracted.

Ileus Cured by Forced Injections of Cold Water and the External Application of Ice.—Dr. P. Pereira reports the case of a man aged 40, apparently in the last stage of ileus, with stercoraceous vomiting and imminent complete collapse, cured by the repeated forced injections of large amounts of cold water, and the internal use of small pieces of ice; large pieces of which were also applied externally. For the soreness and pain remaining after a fœcal passage had been obtained calomel and opium were employed; relief was especially obtained by painting the abdomen with collodion.—*Revue de Thérap.* from *Gaz. Medica de Bahia.*

Carbolic Acid for Condylomatæ.—Dr. Boise destroys condylomata by placing upon them liquid carbolic acid pure or in very concentrated solution, the neighboring parts having been protected previously. The little tumors turn white, mummify and drop off, without leaving any ulceration; no inflammation is ever excited.—*Revue de Thérapeut.*, Dec. 1, 1872.

Tincture of Iodine in Cholera Infantum and Dysentery.—Dr. Gilliam says, in *The Clinic*, "As iodine has the property of arresting transudations, and as it is of particular value in many inflammatory affections of the skin, and as the skin and mucous membrane are very analogous in structure, *à priori*, it would seem probable that iodine might be of service in the above-named affections. I have tried it in a case of cholera infantum and in a case of dysentery. It seemed to yield good results in the former, and eventuated in a cure. In the latter its influence was not so marked, though seemingly beneficial.

Nocturnal Incontinence of Urine treated by Hydrate of Chloral.—Dr. Girolamo Leonardi has recorded in the *Ippocratico* of Naples, the results of the use of chloral in three cases of incontinence of urine. The administration of the drug very rapidly effected complete and permanent cure. Together with the administration of chloral, Dr. Leonardi recommended very little drink to be taken in the evening. In the first case, a scrofulous woman, aged 24, who had been constantly suffering from the complaint since the age of 18, chloral administered in doses of 15 grains every night during 5 nights, and of 15 grains every second night during 10 nights, was remarkably successful. The incontinence was immediately stopped. A course of chloral was continued from time to time. The second case was that of a child, aged 7, who took only one-third of a grain of chloral for 5 nights. The third case was quite as successfully treated in the same way.—*Lancet*, October 26, 1872.

Ingrowing Toe-Nail.—About twenty years ago I applied a bit of compressed sponge to afford temporary relief, and was delighted to find that it effected a radical cure. I make the sponge as solid as leather, by wetting and then winding a string tightly around it, and drying it thoroughly. Of this I cut a small pyramidal piece, less than a grain of rice. This I insert beneath the nail and secure by strips of adhesive plaster, applied longitudinally, to avoid compression. The sponge soon becomes moist and swollen, keeping the nail from the irritated flesh. Any granulations should be previously destroyed with strong nitric acid. I have adopted this plan upon many occasions, and have never found it to fail.—Benj. Blower, *British Med. Jour.*

Galvano-Acupuncture for Aortic Aneurism.—Prof. E. De Renzi reports a case thus treated, and reviews the records of other cases. In his own case the battery used was one of twenty-one elements; the zinc plates four to five centimetres broad, by eight long, immersed about half their length. The index stood at sixty when the circuit was open, at twenty when it was closed. Six needles

were inserted, and each pole was attached for five minutes to each needle, so that the whole operation lasted an hour. On the seventh day the man died of rupture of the sac. An autopsy showed no trace of any clot near the points where the needles had entered, but some evidence of inflammation. The conclusions to which Prof. De Renzi is led, by his review of Ciniselli's cases and others, are—1. That no case is known of a complete and permanent cure of aortic aneurism by galvano-acupuncture; 2. That the cases of apparent cure are more readily explained by the irregular course of the disease, and the effects of quiet and good hygienic influences; 3. That the operation is harmless in itself, but may be the indirect cause of mischief by inducing changes in the walls of the sac, rendering them more liable to burst.—*Nuova Liguria Medica. New York Med. Journal*, Jan. 1873.

The Oxalate of Protoxide of Iron.—At a recent meeting of the Académie de Médecine (*Bull. de l'Académie*, Oct. 12) M. Caventou delivered in his report on this substance, which had been laid before the Academy two years since by M. Girard. The reporter stated that the mode of preparation recommended by M. Girard is in nowise different from that usually employed in laboratories. Its therapeutical properties have been carefully tested by M. Hérard in cases of chlorosis and anæmia, and these prove to be worthy of attention, presenting a preparation of iron which, while proving efficacious, has no tendency to produce constipation. The preparation is almost insipid, is readily taken by patients, and easily borne by the stomach. Given in doses of from ten to twenty centigrammes per diem it increases the strength and cures chloro-anæmia as well as other good preparations of iron, while it establishes a peculiar claim by not causing constipation. Indeed, by raising the quantity to from thirty to fifty centigrammes, an aperient action is obtained. M. Caventou considers that this remedy should be indorsed with the recommendation of the Academy, which is necessary for the authorization of new remedies during the intervals that elapse between the editions of the Codex.—*Med. Times and Gaz.*, Nov. 23, 1872.

Nitrite of Amyl in Spasmodic Asthma.—Dr. James A. Duncan, of Toledo, Ohio, relates (*Michigan Univ. Med. Journ.*, Dec. 1872) three cases of spasmodic asthma promptly relieved by the inhalation of a few drops of the nitrite of amyl.

Abortive Treatment of Furunculi.—As soon as there is perceived on any part of the body that characteristic redness, round in form and variable in size, with a culminating point in the centre, which, red at first, soon turns to a grayish-white, pour into a little saucer a thimbleful of camphorated alcohol; dip three fingers of the right hand in-

to the liquid, and gently rub the part, especially the middle; moisten the fingers, and rub again in the same manner eight or ten times, for half a minute each time. After this friction, dry the place well, and anoint it lightly by the finger with camphorated olive oil, to prevent the evaporation of the camphor. It is rare for a blind boil or furuncle, at the moment of lessening, to resist four applications of this kind. Often they decrease in inflammation, dry up and disappear, after only one application. When many applications are necessary, it is well to let a certain interval of time elapse between them—for example, to make them morning, mid-day, and evening.—*Brit. Med. Journal*, Dec. 21, 1872.

Tincture of Chloride of Iron for Corns.—Dr. C. Barber states (*Lyon Médicale*) that he has cured three cases of corns on the toes by the application of a drop of the tincture of chloride of iron applied on the corns night and morning. This application was continued for fifteen days in one case, when the corns, from which the patient had suffered for thirty or forty years, were entirely destroyed, and pressure on the part gave not the least uneasiness.—*Medical News.*

Sick-Headache (*British Medical Journal*, December, 21, 1872).—In a report on the treatment of this distressing affection, Dr. Wilks recommends three remedies. To cut short an existing attack, he gives bromide of potassium in doses of gr. xv. to xx. One dose is often sufficient. As a prophylactic, he uses the (tincture of ?)cannabis Indica, a few drops thrice daily for some weeks.

Of guarana he says,—

"Thirdly, guarana has been introduced to our notice as a remedy for sick-headache, and here, again, we have a very valuable addition to our pharmacopœia. In many instances, especially those of ladies, I have had the most positive assurance given to me of the power of this drug in arresting headache, so that not the slightest doubt can be entertained of its immense value. A dose is usually taken when the headache is approaching; and if this is not quickly successful in arresting it, a second powder is swallowed; after an hour or so, if the remedy is to be useful, the headache has disappeared. I know of several cases in which the greatest enthusiasm is expressed by patients as to its merits. At the same time, I am constantly hearing of cases where it has failed. I am now trying it in smaller doses by daily administration.

"I feel certain that these three drugs—bromide of potassium, cannabis Indica, and guarana—constitute a most important addition to our nervine medicines, and that in them we have remedies against a terrible complaint which, a few years ago, constituted the opprobrium of medicine. I might say that I know of cases where galvanism has very

speedily cured a pain in the head; and I can call to mind the case of a lady, where the application of the bisulphide of carbon invariably relieved the most severe headaches."

Hyoscyamia.—Dr. Oulmont arrives at the following conclusions in a memoir offered to the French Academy:—

1. Hyoscyamia represents all the active properties of hyoscyamus, and the fixity of the dose is a great advantage in its medicinal use.

2. The dose is two milligrammes a day in pills or hypodermically, increased to ten milligrammes.

3. It should be continued until decided symptoms of intoxication are induced; merely slight dryness of throat and dilatation of the pupil should not cause it to be suspended.

4. It is a narcotic, influencing pain and neuralgia, but less than opium or belladonna.

5. It exerts a favorable influence on the spasmodic or convulsive neuroses; it is very efficacious in mercurial trembling; in paralysis agitans it is the only drug which will cause amelioration.

6. In loco-motor ataxia it is of no use. In a case of tetanus, which however proved fatal, it seemed to cause a distinct remission.—*Revue Thérapeut.*, Dec. 1, 1872.

Aspiration in Thoracentesis.—In a lecture of some length (*Revue Thérapeut.*, Nov. 15, 1872) Dr. Potain insists upon the great value of aspiration as a method of evacuating, without danger, pleuritic fluid. No traumatism follows the use of the instrument whatever, and there is no danger of allowing the entrance of air. The needle used must be very fine.

Sulphites in Tonsillitis.—Dr. Thomas A. Elder states that during the last two years, tonsillitis has prevailed very extensively in Mifflintown, Pa., almost every one having it, and says:—

I have not met with a single case which the sulphites, administered in sufficiently large and often repeated doses, would not promptly relieve and cure. The doses which I use are those recommended by Dr Tyrrell, gr. xx. to xxx., repeated every hour, for an adult, and correspondingly large doses for children. The fever is generally dissipated in twelve hours—rarely continues twenty-four. The soreness of throat, headache, etc., are generally as promptly relieved, and forty-eight hours are sufficient for a cure. In children, when saturated, they have produced sweating, and the peculiar cadaveric hue of sulphurous acid fumes.

When the disease has progressed to the stage of exudation—when the shoe-peg points begin to appear, or later—I have never met with a case which I thought was benefited by the sulphites. I am then ac-

customed to rely upon a prescription of Prof. Miller, for diphtheria, which has almost invariably given prompt and permanent relief.

"℞ Morphia muriat.....gr. ij.
Acid, muriat., dil., }
Tr. ferri chloridi, } .....āā dr. ij.
Syrupi,.....oz. ss.
Aquæ destillat.,.....oz. ij.

M. Sig. Dose: A teaspoonful three or four times a day after water."

ON THE TREATMENT OF BOILS.

Dr. James D. McGaughey says: By some physicians the sulphate of quinine has been used empirically for a number of years, with considerable success in the majority of cases, to prevent the return of successive crops of furunculi. Some have given it as a mere tonic; but Dr. Jackson gave it with quite a different view, because it seemed to him that quinine "operated by taking away or overcoming the susceptibility to the disease." I believe, from my own experience, that quinine given after the time has passed for aborting the pimples by an incision, will shorten the course and circumscribe the limits of furunculus. I know quinine has a remarkable control over superficial inflammations. Whenever I am attacked with common sore throat, even though it has existed for twenty-four hours, quinine liberally taken until the head feels it, continued thus for twenty-four or thirty-six hours, will remove all soreness: at least it has not failed me in five several times. I think the best plan to follow in giving quinine is—considering the aborting period to have been passed—to commence as soon as possible and make a firm impression on the system with five-grain doses, repeated every four hours until the head rings, keeping the impression up moderately by smaller and oft-repeated doses, until the boil has either suppurated or disappeared by resolution. A strict watch should be kept, so that the first pimple may be detected and incised; at the same time five or ten grains of quinine are given daily till all danger is past. No one need think he is going to be successful in circumscribing the trouble if he begins to give quinine just as suppuration is commencing. The great desideratum is to make a thorough impression on the system with the drug, keeping this impression up moderately with smaller and properly regulated doses, *for a considerable length of time*, according to the requirements of each individual case. According to my experience, arsenic—Donovan's solution, preferably—stands next to quinine.

Treatment of Chilblains.—F. Rhien recommends an aqueous solution of iodine and tannin as a remedy for chilblains. He says that the result exceeded his expectations—five applications of the remedy being successful. The application has also been tried by others, with good results when properly applied. The solution is made as follows: About an ounce of tannin is dissolved in half a pint of water; seventy-four grains of iodine are dissolved in an ounce and three-fourths of spirit of wine; the two solutions are then mixed, and enough water is added to make up the whole to two and a half pints. The remedy is applied once daily, the best time being before going to bed. The mixture is gently warmed over a very slow fire; the affected part (*e. g.*, the hand) is dipped in it while still cold, and held there until the liquid, on being stirred, feels uncomfortably hot. The vessel is then removed from the fire, and the hand is dried over it, without gloves. The vessel used must be of earthenware or porcelain, not of metal. Care should be taken not to use too great a quantity of iodine, especially when abrasions are present. According to Rhien, four or five applications are sufficient.—*Brit. Med. Journ.*, Feb. 8, 1873.

A New Antiperiodic.—M. Doran has stated in a note to the Academy of Sciences of Paris (*Comptes Rendus*), that he has never known the *Laurus nobilis* to fail in quotidian or tertian intermittents. Cases yielded to it that were fruitlessly treated by quinia. He has no doubt that in quartan ague it would be equally efficient.—*The Doctor*, Dec., 1872.

Coffee and Sulphate of Quinia.—M. Briquet considers the common practice of administering quinia in coffee open to much objection. He alleges that the tannin in the coffee coalesces with the quinia, forming a tasteless and insoluble and almost inert salt—the tannate of quinia—from which the stomach has as much difficulty in extracting quinia as from powdered bark. It is, he thinks, one of the worst preparations of quinia.—*Brit. Med. Journ.*, Feb. 8, 1873.

A Chemico-Psychological Study of Ergot. (Dorpat, 1871.) Eugene Handelin has published, on the above subject, an inaugural dissertation, an abstract of which is in *Schmidt's Jahrbücher*, No. 8, Bd. 155. He finds the watery extract of ergot far more active than the alcoholic. He thinks that the alkaloids discovered by Wenzell are not the active principles of ergot, because the solution of the watery extract of ergot, after precipitation by corrosive sublimate or tannic acid, still retains its activity. If the active principle were alkaloidal, the tannin would remove it. The physiological results obtained by Handelin are different from those of Klebs; for the former found that, with the watery extract, there was dilatation of the pupil and lessening

of the arterial pressure in spite of the increased frequency of the heart's beat, whilst the latter saw contraction of the pupil and increased arterial pressure. Handelin thinks the differences were caused by the use of different preparations.

It is very evident, however, that the subject needs further investigation.

Therapeutic Value of Silicate of Soda.—MM. Papillon and Rabuteau recently communicated to the Academy of Sciences at Paris, a report of their interesting researches on the action of silicate of soda. The therapeutical effects of this salt are especially worthy of notice. They have recently been tested by some of the hospital surgeons here, particularly Dr. Marc Sée and Dr. Dubreuil, and the results have been very remarkable. Silicate of soda is said by them to be highly efficacious in catarrh of the bladder, where the urine tends to undergo ammoniacal fermentation, in venereal runnings, in specific ulcerations, etc. It acts in dissolving and destroying organic corpuscles, the globules of pus, and all the microscopical parasites which produce corruption. It also seems to exert a certain action on the tissues. In their communication to the Academy, the authors draw the attention of the profession to various other therapeutical properties of the salt; but they add that as yet they are not able to assert the perfect harmlessness of silicate of soda taken internally.—*Lancet*, Dec. 21, 1872.

Treatment of Cholera by Chloral.—In an article in the *Allgemeine Medic. Central Zeitung*, Dr. Blumenthal states that he and two of his colleagues treated eight cholera patients in the Riga Hospital with hydrate of chloral. With the exception of two, all recovered. In one of the fatal cases, the patient was moribund when the chloral was given; the other death occurred in a pregnant woman, aged 35. The most obvious effect of the chloral, in the cases that recovered, was early arrest of the vomiting and diarrhœa.—*British Med. Journ.*, Jan. 11, 1873.

Mode of Action of Prussic Acid.—In a paper in *L'Union*, 65, 1872, Mialhe espouses the view that prussic acid kills by destroying the power of the red blood-cells to purvey oxygen; acting on the blood as on fermenting liquids, which, in its presence, lose the power to continue the fermentation. The reason of the lightning-like rapidity of its action he believes to be that, at the temperature of the body, it volatilizes and passes into the blood by diffusion.—*Schmidt's Jahrbücher*, No. 9, 1872.

Apomorphin as an Emetic.—M. Loch has been using apomorphin by subcutaneous injection, but has obtained results not altogether so favorable as those of the earlier experimenters. In one case, the apomorphin failed to induce emesis, although it was given until "the patient could not stand on his feet." In one case, very alarming symptoms followed the injection of a week-old solution of 0.008 grammes. M. Loch's paper is in the *Berlin Klin. Wochensch.* IX., 1872; an abstract of it in *Schmidt's Jahrbücher*, No. 9, 1872.

Salts of the Alkaloids with the Bile Acids.—In *Schmidt's Jahrbücher*, No. 8, Bd. 155, is an abstract of Franz de l'Arbre inaugural dissertation on the salts formed by the alkaloids with the bile acids. All of these salts are soluble in an excess of the bile; some of them are soluble, others insoluble, in water.

Digitaline.—Ch. Blaquart, in a recent inaugural thesis on digitaline, arrives at the following conclusions:—

Crystallizable digitaline exists in digitalis in the proportion of 10 to 12 parts per hundred, and that nearly 10 per cent. has been extracted from the drug.

There are two distinct substances—amorphous and crystallizable digitaline.

As M. Roucher has shown, crystallizable digitaline may be volatilized. This property may be of use in toxicological examinations.

The crystallizable digitaline acts like a glucoside.

The crystallizable and the amorphous digitaline acts in the same manner upon cold and hot blooded animals.

That there is but little difference in activity between commercial, amorphous, and crystallizable digitaline.

M. Blaquart does not think crystallizable digitaline offers any marked advantages over the digitaline of the French codex; whilst the method of its manufacture is exceedingly complex and laborious. —*L'Union Pharmaceutique*, Nov., 1872.

Eucalyptus.—Dr. A. Rabuteau has made an elaborate chemical study of the leaves of the eucalyptus, and, from his negative results, concludes that there is no alkaloid in them. The method and details of his investigation will be found in *L'Union Pharmaceutique*, Nov., 1872.

The Treatment of Prurigo and Pruritus by Carbolic Acid.—Dr. Rothmund (*Ærztl. Intelligensblatt*, 39, 1872) states that the internal administration of carbolic acid in pruritus excels every other method. He has tried also the hypodermic injection of it with

marked success, there being no local irritation produced as one would expect beforehand. Solutions of pure carbolic acid seem to be more efficacious than those of carbolate of soda.—*The* (*London*) *Medical Record*, Jan. 22, 1873.

ON THE TREATMENT OF POISONING BY THE POISON IVY OR POISON SUMACH.

Dr. James C. White has an elaborate article on the action of Rhus venenata, and R. toxicodendron upon the human skin, in the New York *Medical Journal*, for March, 1873. From it the following is extracted:—

Whether or not we should resort to an antidote must, of course, be determined by the length of time since the parts affected were in contact with the plant or its exhalations. How long the poison may retain its characteristic peculiarities after absorption by the skin, and how readily our antidote may follow and penetrate to it, are also matters of uncertainty. As to the nature of the remedies to be used at this stage and for this purpose, there can be, of course, no longer any question. We have to deal with an acid, and the antidote for an acid is an alkali—that is, provided the salts thus formed are not equally poisonous. Whether the salts formed with toxicodendric acid by ammonia, potash, and soda, are poisonous, Professor Maisch leaves us somewhat in doubt as the result of experiment, but speaking clinically he leaves us to believe they are not, for he says that the application of solutions of ammonia seemed to be most effective in counteracting the action of the acid. This is consistent with the popular reputation of solutions of saleratus and soda as remedies. These are true antidotes, but they can be of benefit only from their chemical action. In the later stages, or in other words, against the subsequent eczematous changes in the cutaneous tissues, they can do no good. The action of that most popular of all remedies in this affection, the solution of sugar of lead, is a mixed one, and seems to have been happily, though unwittingly, selected as an appropriate remedy in all stages. Toxicodendric acid precipitates from it an insoluble, and therefore harmless salt, while its astringent action is well adapted in many cases to the relief of the inflammatory processes in the skin.

The treatment of the later stages of rhus-poisoning, that is, of the eruption it produces, is mainly that of the corresponding varieties of ordinary acute eczema. In the great majority of cases I have found black-wash—calomel ʒ j, lime-water Oj—by far the best application to the affected parts, used as an evaporating lotion upon thin and old

linen or cotton cloth, for half an hour to one hour at a time, two or three times a day. I have used in connection with it, to moist or excoriated parts, a powder of oxide of zinc ʒ j, starch ʒ j, or plasters of oxide of zinc or diachylon-ointment, as in the management of ordinary eczema. In the black-wash, we have possibly three elements at work in our favor: first, the alkali as antidote, if it is of any avail at such periods; second, the action of cold from evaporation upon the local hyperæmia; and third, the astringent effect of the mercurial powder upon the diseased tissues. Only upon the thickened epidermal coverings of the efflorescences in the palms does it seem ineffectual. To these tardy and well-protected manifestations I apply solutions of corrosive sublimate, from one to two grains to the ounce of water, in the same way as the black wash is used upon the other parts. By these means the eczematous process is checked and shortened, and the subjective symptoms greatly alleviated.

Ventilation and Warming.—In a lecture on ventilation, lately delivered before the Franklin Institute, Mr. L. W. Leeds, after detailing the abominations he encountered in his examination of the ventilating arrangements of the Treasury building at Washington, gives the following practical directions concerning provisions for ventilation and warming in the construction of buildings. First, never have long underground fresh-air ducts. Second, never allow a sewer, soil-pipe, foul-air flue, or smoke-flue, to come near the fresh-air supply-flue, for fear of some connection being made between them by carelessness or accident. Third, never heat a building exclusively by currents of warm air. Fourth, always put the heating-flues on the outside walls instead of on the inside walls. Fifth, endeavor strenously to avoid the fresh-air chamber becoming a common receptacle for all the rubbish of a filthy cellar.

Tea Adulteration.—The *North British Daily Mail* has published analyses of thirty-five samples of tea bought in different parts of Glasgow. Out of the thirty-five samples analyzed—twenty-seven of which were black and eight of green tea—only six were unadulterated. All were high-priced, and none of the six was a sample of green tea. One sample contained *no tea at all*, so far as the analyst could discover. The adulterants which were used in this and other twenty-eight cases, were iron, plumbago, chalk, china clay, sand, Prussian blue, turmeric, indigo, starch, gypsum, catechu, gum, and leaves of various kinds, elm, oak, willow, poplar, elder, beech, hawthorn and sloe. It is but justice to the retail venders to state that the adulteration is not supposed to be their work; it is largely done in China, and is further carried on after the "tea" has reached Britain.—*Boston Medical and Surgical Journal.*

Poisoning by Strychnia, successfully treated with Hydrate of Chloral.—By S. S. Turner, M.D., of Grand River, Dakota.

At noon, April 28, 1872, I was called to see L., æt. 40, who was reported to have been poisoned with strychnia (quantity unknown), by wife—cause, jealousy.

All the usual symptoms ascribed to poisoning by strychnia were present, and well marked. Gave chloral gr. xxx. In about thirty minutes there was marked abatement in the severity of the convulsions, and improvement in vision. In thirty minutes more a violent convulsion ensued, and fifteen grains of chloral were given with the effect, in a short time, of inducing freedom from convulsions, which lasted. Half an hour afterwards convulsions again returning, I gave chloral gr. xxx. Relief followed quickly, and the patient remained tranquil for three hours, when slight spasm recurring, another dose, gr. xxx., of the drug was administered.

No further convulsions occurred. The patient slept all night, and on the following day complained only of extreme muscular soreness, which was mitigated by chloral hydrate in reduced quantity.

OLEATES OF MERCURY AND MORPHINE IN OBSTINATE INFLAMMATION.

Mr. Jno. Marshall (London *Lancet*) commends these substances very highly as local applications in inflammation. He says (*inter alia*): "The oleates are prepared by adding the oxide of mercury, recently made and well dried, to oleic acid, aided by a temperature of 300° F. The strength of the preparations used is indicated by the percentage of the oxide of mercury which they contain. The five-per cent. solution is a clear, pale-yellow liquid, resembling olive-oil, but thinner; the ten-per-cent. solution is also fluid and perfectly clear, but as dark as linseed-oil; while the twenty-per-cent. preparation is an opaque, yellowish, unctuous substance, closely resembling in appearance resin ointment, melting very readily at the temperature of the body, and forming a kind of transparent viscid, colorless varnish when applied to the skin. The chief care to be observed in the manufacture of these solutions is not to hurry the process, and not to employ a high temperature, or the mercury will be immediately reduced.

"Unlike the mercurial ointment so long in vogue, which is a crude, gross, unscientific mixture, very dirty and very wasteful, because so small a proportion of its mechanically-admixed mercury is but slowly absorbed, these solutions of oleate of mercury are cleanly and econom-

ical in use: and as the diffusibility or penetrating power of oleic acid is much greater than that of ordinary oils or fats, and as each one-thousandth part of even a minim of these preparations contains its proper modicum of mercury, they are absorbed by the skin with remarkable facility, and manifest their remedial effects with great promptitude. They should not be rubbed in like ordinary liniments or embrocations, but should be *merely applied with a brush, or be spread lightly over the part with one finger;* otherwise they may cause cutaneous irritation, or even produce a few pustules on the skin, especially in certain persons. This result may, however, be obviated by the addition of a small quantity of olive-oil or purified lard, according as an oleaginous or an unctuous preparation is required. Any of these forms may be scented by the addition of essential oils.

"In employing these mercurial solutions for combating persistent inflammation of joints, I soon found that the addition of morphia was of very great advantage. For this purpose the simple alkaloid must be used, as neither the hydrochlorate, the acetate, nor the meconate is soluble in oleic acid. For every drachm of the solution of oleate of mercury in oleic acid one grain of morphia may be added. Being, as well as the mercury, completely dissolved, it quite as rapidly penetrates the skin, comes quickly into contact with the extremities of the nerves, and thus, even within a few minutes, acts upon them at their most sensitive points, and speedily produces a soothing effect.

"The oleates of mercury and morphia, thus united in one preparation, represent, as it were, a liniment, ointment, or plaster of mercury and opium; but they are far more elegant, economical, and efficacious. As a rule, according to the size of the part affected, from ten to thirty drops are sufficient for one application. This should be repeated twice daily for four or five days, then at night only for four or five other days, and afterward every other day, until a cure is obtained.

"Unless used in excessive quantity, the oleate of mercury does not salivate or produce any marked constitutional disorder.

"I may mention that not only in persistent articular inflammation, but also in simple synovitis, these remedies rapidly relieve the tenderness and pain, and promote the absorption of the fluid effused into a joint. They are also of decided benefit in the rheumatic, the arthritic, and the mixed forms of joint disease; but in these they do not of course supersede the necessity for general treatment. In inflammation of the mammary gland occurring during or after lactation, or altogether independently of that secreting process, their efficacy is unequivocal; for I have seen not only the induration left after previous abscesses speedily disappear under their use, but a tendency to recurrent suppuration in the site of old abscesses, and the threatened formation of new

ones, entirely controlled and arrested. I have also seen a threatened absence in the perinæum from inflammation of one of Cowper's glands, and likewise the troublesome indurations left after ordinary perineal abscess, rapidly disappear on the use of these preparations. In obstinate and painful tonsillitis, in epididymitis, in periostitis, and in inflammation with imminent or actual suppuration in or around lymphatic glands, I have similarly employed them with decided advantage. In hydrocele they have not appeared to be useful. I have used equal parts of the twenty-per-cent. ointment and purified lard applied outside the eyelid, with success, in hordeolum and in palpebral conjunctivitis.

"In many cutaneous affections the oleate of mercury solutions, without morphia, form elegant and powerful remedies. In obstinate sycosis menti I prefer the five-per-cent. solution of oleate of mercury in oleic acid, with the addition of an eighth part of ether. This, when applied to the skin with a camel's-hair pencil, is a most diffluent and penetrating remedy. It enters the hair-follicles and the sebaceous glands, penetrates the hairs themselves, and carries everywhere with it its powerful metallic constituent. Besides sycosis, it will cure chloasma and the various forms of tinea. It is useful in porrigo and in pruritis ani et pudendi; but I have not found it serviceable in non-specific psoriasis or in eczema. The solution of oleate of mercury destroys pediculi immediately; and, owing to its singular power of permeation, simultaneously kills the ova.

"Again, in many of those syphilitic affections for the cure of which mercury is applicable, the oleate-of-mercury preparations offer some advantages. Thus, in congenital syphilis, a piece of the twenty-per-cent. ointment about the size of a pea or bean placed in the child's axillæ night and morning for five or six days, rapidly and easily, and without any sign of uncleanliness, produces constitutional effects.

A Remedy for Colds.—Dr. Dobell, in his work on Winter Cough, declares that *colds can be stopped without lying in bed, staying at home, or in any way interfering with business—provided* the treatment be begun directly the first signs of catarrh show themselves in the nose, eyes, throat, or chest. When the cold has become established it will not answer. The treatment is as follows: 1. Give five grains of sesquicarbonate of ammonia and five minims of liquor morphiæ, in an ounce of almond emulsion every three hours. 2. At night give an ounce and a half of liquor ammoniæ acetatis in a tumbler of cold water, after the patient has got into bed and been covered up with several extra blankets; cold water to be drunk freely during the night should the patient be thirsty. 3. In the morning the extra

blankets should be removed so as to allow the skin to cool down before getting up. 4. Let him get up as usual and take his usual diet, but continue the ammonia and morphia mixture every four hours. 5. At bed-time the second night give a colocynth pill. No more than twelve doses of the mixture from first to last need be taken, as a rule; but should the catarrh seem disposed to come back after leaving off the medicine for a day, another six doses may be taken and another pill. During the treatment the patient should live a little better than usual, and on leaving it off should take an extra glass of wine for a day or two.

Tetanus, Bromide of Potassium in—Curare in.—Dr. Ponas (*Gazette Hebdomadaire*, No. 26, 1872), reports a case of traumatic tetanus occurring in a man twenty-one years of age and of feeble constitution, and ending in recovery under the use of opium and bromide of potassium.

Dr. Galte also reports a case (*L'Independente*, Sept., 1872, and *Bordeaux Med.*, October, 1872), in which he used with a successful result hypodermic injections of curare: 85 centigrammes of the curare were used in 25 injections spread over 15 days.

Influence of Cold Water on the Spleen.—In the number of *Virchow's Archives* for February 21, 1873, Prof. F. Mosler, of Greifswalde, has an elaborate paper upon the above subject, in which he arrives at the following conclusions:—

1. The immediate contact of cold water upon the normal spleen caused a contraction, which is proportionate to the coldness of the water and the duration of the contact.

2. In a lesser degree cold water acts upon the normal spleen, through the abdominal wall. This influence is more marked when the water is applied by means of the douche than when simple compresses are used, and is less than the contraction caused by quinia.

3. Upon the enlarged spleen, acute or chronic, the cold water also acts.

4. The paroxysm of intermittent fever can, by means of the cold douche, after the manner of Fleury, be set aside.

5. The cold douche deserves neither in recent nor chronic intermittent the preference over quinia. It does not hinder the return or the formation of a splenic tumor any more than quinia.

6. The cold douche lessens the spleen of typhus.

7. A combination of the use of cold water upon the spleen, either in the form of baths, ice-bladders, or the cold douche, and of quinia or quinoidine, constitutes the best treatment for both the acute and chronic forms of splenic tumor.

Influence of Ergot on Blood-Vessels.—As the result of an experimental investigation, Dr. A. Wernich arrives at the following conclusions (*Virchow's Archives*, Jan. 10, 1872):—

1. In certain vascular provinces (*Gefässprovinzen*), (especially the skin, muscles, intestines, bladder, pia mater of the brain and intestines), narrowing of the single arteries is plainly perceptible after the injection of ergot. This influence is not affected by previous section of the sympathetic.

2. On the uterus this influence is not very marked.

3. The contractions noticed in the uterus after the injections come on more slowly than the alteration of the vessels in the other organs.

4. They are probably caused by the excitement (anæmic in origin ?) of motor centres of the uterus in the lower brain or spinal cord, for they do not occur after section of the latter.

Chloride of Calcium as a Disenfectant.—Albert Eckstein, technical chemist at Vienna, commends most highly the chloride of calcium as a disinfectant for latrines and similar places. He has employed it for two years in his house, where the privy is used daily by at least 100 persons, and has made comparative experiments with other disinfectants with the following results:—

1. Two pounds of sulphate of iron in solution. After 2–3 hours all bad smell had disappeared, but in 12 hours all the influence of the disinfectant was lost.

2. Sulphate of copper in solution, the same.

3. Two pounds of the sulphate of iron in crystals: their effects lasted two days.

4. Sulphate of copper, the same.

5. Sulphurous acid in solution rapidly lost its effect and was exceedingly irritating to the respiratory organs.

6. Two pounds of impure carbolic acid filled the house for two days with such a disagreeable smell, that it was impossible to tell whether original odor was destroyed or covered up.

7. Two pounds of sulphate of iron in a parchment sack exerted a disinfecting influence for 3 full days, and when the parchment sack was drawn up it contained only some dirty, odorless fluid.

8. Two pounds of the best chloride of calcium in the parchment sack disinfected the privy for at least 9 days.—(*Zeitschrift des Oester-Apothek-Vereines*, Feb. 10, 1873.

ON THE ACTION OF CABBAGE-LEAVES ON ULCERS AND DISEASES OF THE SKIN.

Dr. Blanc has published in some late numbers of the *Revue de Thérapeutique* a very long memoir on the above. Space would fail us to reproduce it, but we believe it would interest our readers if we introduced to them at least his conclusions.

Moreover, he works with an external therapeutic agent so easy to obtain that its name alone is sufficient to arrest the attention of medical men.

This memoir, Dr. Blanc says in closing, establishes sufficiently how useful the cabbage-leaf is in many cases of cutaneous disease, by actions new in a practical as well as a theoretical point of view. These facts have their laws. I will formulate them as I understand it in the following propositions:—

1. The cabbage-leaf excites and augments suppuration or the secretion of ulcers, ulcerations, vesicles, and pustules. It has the same action on the integuments affected by an erysipelatous or furunculous inflammation, but recovers tissue in a morbid condition.

2. This augmentation of suppuration is constantly followed by an amelioration and often by a cure. It is the condition necessary to the result, and the property of the leaf which determines this result is an indirectly curative property.

3. This property does not consist in any principle which the leaf yields for absorption, but rather in an affinity which the leaf has for the vitiated secretions.

4. The leaf exercises this affinity on open ulcers, or on ulcers covered by a thick or thin scab or crust; it exercises it on the thickened epidermis or where it is converted into thickened rind-like membranes; in simple or confluent variola, throughout mortified tissues, through the integuments, whether inflamed or non-inflamed, but recovers tumors capable of absorption.

5. When the tegumentary affection is wide-spread or general, the action of the leaves on the parts where they are applied benefits the whole disease.

6. The matter in the parts not covered by leaves is absorbed, and at once directed under the leaves to be immediately excreted at that part.

7. Treatment by the leaves of a suppurative affection prevents reabsorption and consequent pyæmia.

8. The cure obtained by this means is more complete and certain than by any other, because it is brought about only when the cause and products of disease are eliminated from the system.

9. This mode of treatment is in perfect harmony of action with the *vis medicatrix naturæ*. This essays in skin diseases to eject from the system their cause and effects, whilst the leaves aid this action.

10. The cure of an ulcer by the leaves, however wide-spread and long-standing it may be, is without danger, and relapse is very rare.

11. The cicatrices obtained by the leaves are remarkable for their small degree of deformity.

12. Small-pox, measles, and scarlatina treated by applications of the leaves have few or no sequelæ; *e. g.*, phthisis is not to be feared.

13. The cabbage which is employed externally and in the natural condition cannot, at the time, yield to the organism any principle capable of neutralizing the cause of a malady and destroying its effects; and since the cure operates by suppuration and secretion, induced and stimulated by the leaves, we must conclude—

1st. That in case of a cure the cause of the disease has been excreted by secretion or suppuration.

2d. That some diseases have for their immediate cause a vitiation *sui generis* of the fluids.

3d. That the *vis medicatrix* proceeds to the cure of these diseases by driving the vitiated matters towards the tegumentary covering where it spreads them, eliminating them afterwards by vesicles, pustules, or the excretory vessels on the inflamed or ulcerated surfaces.

14. These operations take place in a diseased body; they are then diseased functions, functions which have the integuments for organs; the integuments modified by inflammation, either simple, vesicular, pustular, or serous.

15. The leaves are the auxiliaries of this function; they attract it out by their affinity for vitiated fluids.

16. This elimination accomplished, the means which have served for it, I should say the modifications of the integuments, being no longer required, disappear; they are cured.

17. This mode of cure, this treatment, I would call a cutaneous depuration.—*The Doctor*, Feb. 1.

ELIMINATION OF ALCOHOL.

Dr. Dupre has renewed some experiments on this subject and concludes—

1st.—The quantity of alcohol eliminated daily does not increase with the continued ingestion of alcohol.

2d.—The elimination of alcohol, after the ingestion of one or more doses, ceases from the ninth to the twenty-fourth day after the ingestion of the last dose.

3d.—The quantity of alcohol eliminated by the kidneys and lungs is but a very small part of that ingested.

In the course of his experiments the author found, that after six weeks of total deprivation from alcoholic drinks, and even in one individual who completely abstained from alcohol, that the urine contains sometimes a substance which is not alcohol, but which presents the characters by which we generally recognize alcohol. This body passes over among the earliest products of distillation, gives acetic acid on being oxidized, reduces the bichromate of potash when dilute sulphuric acid is present, and its aqueous solution has a lower density than water. It furnishes iodoform, and exists in the urine in a very small quantity. —*The Doctor*, Feb. 1.

BORAX AND THE NITRATE OF POTASSA IN THE LOSS OF VOICE FROM "COLDS" IN PUBLIC SPEAKERS AND SINGERS.

Dr. John W. Corson, of Orange, N. J., states (*Medical Record*, Jan. 1, 1873):—

"1. That in sudden hoarseness or loss of voice in public speakers or singers, from 'colds,' relief for an hour or so, as by magic, may be often obtained by slowly dissolving and partially swallowing a lump of borax the size of a garden-pea, or about three or four grains, held in the mouth for ten minutes before speaking or singing. This produces a profuse secretion of saliva, or 'watering' of the mouth and throat. It probably restores the voice or *tone* to the dried vocal cords, as just 'wetting' brings back the missing notes to a flute when it is too dry.

"2. Such 'colds' may be frequently 'broken up' at the very commencement; and this restorative action of the borax to the voice may be materially aided by promptly taking, the evening previous to a public effort, dissolved in a glass of sweetened water, a piece of nitrate of potassa or 'saltpetre' a little larger than a garden-pea; or about five grains, on going to bed, and covering with an extra blanket. The patient should keep warm next day. This both moistens the dry throat and further relieves the symptoms of 'cold' and slight blood-poisoning from suppressed perspiration, by reopening the millions of pores of the skin, more or less closed by cold.

"3. These remedies have the three recommendations of being easy to obtain, convenient to carry in travelling, and perfectly harmless.

"4. They are nearly or quite useless in the actual cure of long-continued chronic disease of the throat, or acute inflammation or 'tonsillitis,' both of which require other appropriate treatment."

ON THE ACTION OF SUBCUTANEOUS INJECTIONS OF EXTR. SEC. CORNUT. AQ. IN FIBRO-MYOMATA OF THE UTERUS.

BY PROF. HILDEBRANDT, KOENIGSBERG.

In nine cases of large fibroma of the uterus, which the author treated with subcutaneous injection of secale cornutum, he attained, in one instance, a complete cure, and in five cases decided improvement, viz.: reduction in the size of the tumor, and subsidence of the aggravating symptoms, especially the hemorrhage.

The management is as follows: Of a solution of 3 grm. extr. secale cornut. aq. in 7.5 grm. each of glycerine and water, a syringeful is daily injected. This procedure may take place at the home of the patient. Prof. H. found that the skin at the lower part of the abdomen is more appropriate than in the region of the umbilicus; after 10 to 15 injections the ergotin solution passes easily out of the opening, therefore some cotton batting with collodium should be applied.

The greatest number of injections made use of in one case was 120; in two cases the ergotin injections could not be made use of—in one case on account of the severe pain, in the other on account of manifestations of intoxication.

This observation of Hildebrandt is of great importance, and can be strongly recommended for further proofs. The explanation he gives as to this action is as follows: Probably an insufficient nutrition of the tumor takes place, partly by the contraction of the vessels supplying the same, partly by the compression (by the uterine walls), this insufficient nutrition gradually leading to fatty degeneration and resorption of the tumor.

Gleet treated with Medicated Bougies.—G. Lorey gives the results of eighty cases of gonorrhœa and gleet treated by this means. The cases of gleet, twenty in number, were all cured in a short time; the longest course included twenty-two bougies, one a day, and the

shortest three bougies, the average being nine. The author observes that these cases, being treated in a hospital, doubtless derived benefit from the regular life there; it is not uncommon for a gleet to be greatly exacerbated by a long walk, slight excess in drinking, or a single act of coition. The bougies used were seven and a quarter inches long—*i. e.*, about the length of the urethra—and from one-eighth to one-sixth of an inch in diameter. The centre was of gelatine, the outside of gum arabic mixed with the medicine, three-fourths of a grain each of sulphate of zinc and belladonna. After being dipped in cold water, they are easily inserted. In the sixty cases of gonorrhœa, no such startling results followed. The bougies served as well as the ordinary injections to cut short the disease—no better. But for two of the incidents of gonorrhœa, pain in making water and nocturnal erections, bougies medicated with opium (three-fourths grain), or opium and belladonna (āā, three-fourths grain), acted admirably. Put in at night, they insure comfortable rest and easy micturition in the morning. It has been urged that, like permanent bougies, they might produce orchitis; but they are dissolved in the course of an hour and a half; and no orchitis occurred in any of the eighty cases observed by M. Leroy.—*Annales de Dermatologie et de Syphilographie*, November, 1872.—*New York Medical.*

Treatment of Psoriasis (*La France Médicale*, January 15, 1873).—Psoriasis is not in itself a serious disease, says M. A. de Montméja, but it is obstinate, and those who have once been affected by it are very liable to relapses. It is often hereditary, manifesting itself only when the adult period is reached, after which it may be either intermittent or inveterate. In the present state of our therapeutical knowledge, we must not imagine that we can effect a radical cure of psoriasis; we may clear the skin, or hasten the evolution of an attack, but it is impossible to prevent relapses. The treatment is divisible into that by local and general means. The general treatment consists in the administration of mild and frequently repeated aperients, and of arsenical and sulphuretted preparations, as well as of those containing cantharides. M. Hardy prefers small doses of the arseniate of soda to the other preparations of arsenic. M. de Montméja has obtained considerable success from the employment of two drops of tincture of cantharides in a glass of eau sucrée, the dose being increased up to thirty drops per diem. Its use, however, requires extreme care and vigilance. Copaiva is sometimes very useful when given internally. In addition to these means, the waters containing sulphur, of Saint Honoré-les-Bains, Baréges, Aix-en-Savoie, may be tried, especially in inveterate cases. The local treatment that is found most beneficial is

the application of vapor baths, and either warm alkaline or sulphurous baths, with ointments containing the empyreumatic oils. It is rare for sulphuretted oils to prove of any service, and if mercurial ointments are used, care should be taken when the scabs have fallen off, lest salivation be induced. The oil of Cade, with three parts of lard, is very useful.

MATERIA MEDICA.

THE OPIUM ALKALOIDS.

A LONG and elaborate paper on these bodies, by O. Hesse, is concluded in the October number of the *Vierteljahrsschrift für prakt. Pharmacie*. The author finally states that there are in opium at least 15 alkaloids, which may be divided into the following groups:—

I. MORPHIA GROUP. (a) *Morphia group* in the narrowest sense: Morphia, Codeia, Pseudomorphia. (b) *Laudania group:* Laudania, Codamia, Laudanosia.

II. THEBAIA GROUP. Thebaia, Cryptopia, Protopia.

III. PAPAVERINA GROUP. (a) *Papaverina group* in the narrowest sense: Papaverin. (b) *Narceina group:* Narceina, Lanthopia.

IV. NARCOTINA GROUP. Narcotina, Hydrocartina.

The position of meconidia is uncertain.

The solution in concentrated pure sulphuric acid yields for the several groups the following colors:—

Group I. (a) Dirty dark green; (b) dirty reddish violet.

Group II. Dirty green to brownish green.

Group III. (a) Dark violet; (b) blackish brown to dark brown.

Group IV. Dirty reddish violet.

THE PREPARATION OF KOUMIS OUT OF CONDENSED MILK.

KARL SCHWALBE recommends the following process:—

To 100 cubic centimetres dissolved in a little water, add 1.0 grm. of lactic acid, 0.5 grm. of citric acid previously dissolved in water, and 15.0 grm. of rum; then dilute with sufficient water to make the whole quantity measure from 1,000–2,500 cubic centim. Place this mixture in a Liebig flask and saturate with carbonic acid. Put this flask in a warm room and allow to stand from 2 to 4 days. If at that time there

is a good foam upon it and fine coagula through it, it is ready for use. It may be kept good for 8 days.

The advantages of this koumis are—1. That by the use of rum, arrack, cognac, kirschwasser, &c., the flavor can be varied to suit the taste.

2. The casein is in very fine flakes, and therefore in a very digestible state.

3. The ready preparation of it as wanted.

4. The taste is more agreeable than that of the other sorts.

5. Its cheapness.

—*Zeitschrift des Oestèr. Apotheker Vereines.* Oct. 20, 1872.

ON THE COLORING OF GUAIAC RESIN BLUE.

In the *Vierteljahrsschrift für praktische Pharmacie*, Heft 1, 1873, is an elaborate paper by Ed. Schär on the above subject. From it we abstract and translate the following points:—

Hadelich, in his very careful investigation, found that guaiac resin is composed of guaiacresinic acid (guajakharzsäure), guaiaconic acid, guaiacin (guajakbetuharz), guaiacic acid (guajaksäure), and guaiac-yellow (guajakgelb). He also found that the sole principle which develops the blue color when oxidized, is the guaiaconic acid. Ed. Schär has repeated and extended this investigation of Hadelich and confirms the fact that the guaiaconic acid is the coloring principle. It constitutes about 70 per cent. of the resin, is soluble in alcohol and chloroform, also less freely in ether. When pure it is not soluble in benzole or sulphuret of carbon, but as it exists in the resin, probably owing to the influence of the soluble substances united with it, it is slightly so. When the salt of guaiacresinic acid crystallizes out of the watery solution in potash, the guaiaconic acid salt remains behind, and consequently the solution affords a delicate test for oxidizing substances. Guaiaconic acid salts are decomposed by carbonic acid, whilst those of guaiacresinic acid are only affected by the stronger acids. The guaiaconic acid is best prepared by passing carbonic acid through solution of its potash salts, washing the precipitate with water, and treatment of it with ether. Prepared in this way, guaiaconic acid ($C_{19}H_{22}O_6$) is an amorphous brownish-yellow substance, extraordinarily susceptible to the influence of light, especially to the rays at the violet end of the spectrum. It is also extremely sensitive to the ordinary oxidizing agents.

ON THE PREPARATION OF THE BROMIDES OF QUINIA, MORPHIA, STRYCHNIA AND CALCIUM.

BY GEORGE MACDONALD.

The bromides of the alkaloids may be readily prepared in small quantities by precipitating a solution of their neutral sulphates with bromide of barium.

As bromide of barium is a salt not met with in commerce, the operator will have to make it for himself, by saturating a solution of hydrobromic acid with freshly precipitated carbonate of baryta. The following is a good method:—

Put 1 oz. by weight of bromine and 8 fluid ounces of water into a pint jar. Attach a sulphuretted hydrogen apparatus, being careful to so place the end of the delivery tube that it will touch the surface of the bromine, and pass a stream of sulphuretted hydrogen slowly through until the bromine is entirely converted into hydrobromic acid. Filter the hydrobromic acid solution into a capsule, and warm gently until it has lost all sulphurous odor.

To make the carbonate of baryta, to a boiling solution of 2 oz. of chloride of barium in a pint of water, add solution of carbonate of ammonia (to which a little ammonia has been added) in excess, wash the precipitate three or four times by decantation, and afterwards transfer it to a filter, and continue the washing until the filtrate ceases to produce any turbidity on the addition of a solution of nitrate of silver, to which a few drops of nitric acid have been added. Then remove the precipitate from the filter, and mix it with sufficient water to bring it to the consistence of thick milk.

To make the bromide of barium, add to the hydrobromic acid solution small portions at a time of the mixture of carbonate of baryta and water, until rather more than three-fourths of the mixture has been added. When this quantity has been added, apply a gentle heat and shake vigorously. Then filter a small portion and test with litmus paper. If it shows an acid reaction, more carbonate of baryta must be added until the reaction is neutral. When a sufficient quantity of carbonate of baryta has been added, filter and evaporate to 4 fluid ounces. It is not necessary to proceed to crystallization, as the salt is very soluble, and therefore difficult to crystallize in small quantities, and a solution of it is really what is wanted after all.

BROMIDE OF QUINIA.

To make this salt, dissolve 1 oz. of medicinal sulphate of quinia in 32 fluid ounces of boiling water, and add solution of bromide of ba-

rium until a precipitate ceases to be produced. (A little less than 5 fluid drachms of the solution of bromide of barium, made by the formula given above, will be about the proper quantity.) Filter a small quantity of the solution, acidulate it slightly with nitric acid, and test for baryta with a few drops of diluted sulphuric acid. If a whitish turbidity is produced, it is an indication that too much bromide of barium has been added, and enough sulphate of quinia must be added to entirely decompose it. If, on the other hand, the presence of baryta in the solution was not indicated, slightly acidulate another portion of the filtrate with nitric acid, and add a drop or two of solution of bromide of barium. If this produces a whitish turbidity, it shows that there has not been enough bromide of barium added, and more must be *very carefully* added, until the sulphate of quinia is all or *nearly* all decomposed. It is better, of course, to have a little undecomposed sulphate of quinia in the solution than any bromide of barium.

When the precipitation of sulphate of baryta is completed, filter the solution, while still warm, into a capsule, and evaporate at a gentle temperature, until crystallization begins to set in. Then remove from the fire and set aside to crystallize. The bromide of quinia will be found to be aggregated in *globular clusters* of brilliant silky needles, and the singularly beautiful appearance of the crystallization is alone almost ample compensation to any one for the little trouble he may go to in making it.

Drain the crystals well, remove them from the capsule, and place between sheets of bibulous paper and set aside to dry. The crystals are soluble in about 40 parts of cold water, and appear to be anhydrous. At least I have had a small quantity exposed to the air for a couple of weeks, and they do not show the slightest appearance of efflorescence. I have not made accurate weighings, and therefore cannot speak positively.

BROMIDES OF MORPHIA AND STRYCHNIA.

These salts may be prepared after the same method as bromide of quinia, with slight modifications, which will readily suggest themselves to the mind of the operator. They both crystallize well, and are quite as soluble as the corresponding sulphate.

BROMIDE OF CALCIUM.

The process of Mr. James R. Mercein, in the March number of the *American Journal of Pharmacy*, is probably as good a one as could be devised. The majority of apothecaries, however, will find the following to be a more ready and convenient way of making it:—

Dissolve 4 oz. of bromide of ammonium in a pint of water. Put in a flask and bring to the boiling-point. Keep boiling, and add milk of lime (made from *pure* calcined lime) in small quantities, until ammoniacal vapors cease to be evolved. The operator can easily tell when this point has been reached, by the sense of smell. Filter the solution, evaporate to a syrup consistency, remove from the fire, and stir until cold. This salt is quite deliquescent, and requires to be kept in well-stoppered bottles. In preparing this salt, care must be taken as to the quality of lime used, as some limestone contains a large percentage of carbonate of magnesia, and the salt obtained by using a lime burnt from limestone of that quality, would necessarily contain a correspondingly large percentage of bromide of magnesium.—*American Journal of Pharmacy.*

[NOTE.—In decomposing bromide of ammonium by caustic lime, care must be taken to avoid an excess of the latter, since a basic bromide (oxybromide) of calcium is very readily formed, having a strong alkaline reaction:

The term *bromide of quinia* has of late been frequently used in medical journals but is incorrect. The salt being a combination of *hydrobromic acid* with the alkaloid *quinia*, should be called hydrobromate of quinia. Its composition is analogous to that of hydrochlorate (muriate) of morphia, and its proper name is formed correctly only in perfect analogy with that of the latter.—ED. *American Journal of Pharmacy.*]

ECONOMY IN DISINFECTANTS.

BY E. C. C. STANFORD, F.C.S.

SOME of the popular disinfectants have such an offensive odor of their own that an odorless substance will generally secure the preference for ordinary household purposes. We have several harmless, cheap, and odorless disinfectants amongst the alkaline and other chlorides. I have recently experimented on several of these to ascertain which is the most powerful, and, at the same time, the cheapest. That highly popular substance known as Chloralum was used also for the sake of comparison. The experiments lasted thirty days, and the times noted were those when mildew and offensive odor first appeared. The chlorides were each mixed in the proportion of 2 per cent. and 5 per cent. with urine. In the second experiments a mixture of equal parts of blood and water with the clot removed was used, and the chlorides added in the same proportions.

Mixtures with Urine, 2 per cent. Salts.

	First appearance of mildew.	First appearance of offensive odor.
Chloralum	4 days.	6 days.
Chloride Iron	none.	none.
" Calcium	15	none.
" Sodium	4	8
" Potassium	4	5
" Ammonium	4	23

Mixtures with Urine, 5 per cent. Salts.

Chloralum	4 days.	6 days.
Chloride Iron	none.	none.
" Calcium	25	none.
" Sodium	5	6
" Potassium	12	none.
" Ammonium	none.	7

Mixtures with Blood and Water, 2 per cent. Salts.

Chloralum	11	none.
Chloride Iron	26	none.
" Calcium	18	none.
" Sodium	4	5
" Potassium	5	6
" Ammonium	none.	12

Mixtures with Blood and Water, 5 per cent. Salts

Chloralum	11	none.
Chloride Iron	none.	none.
" Calcium	18	none.
" Sodium	4	5
" Potassium	4	5
" Ammonium	none.	13

It will be seen that the most powerful of all is the chloride of iron, the simplest and least powerful is the chloride of sodium. The cheapest, in proportion to its power, is the chloride of calcium. This substance is a waste product in all alkali works, and the quantity at present thrown away is enormous; I now propose it for general household use as a convenient, colorless, harmless, and cheap disinfectant. I propose to use it in the form of solution containing 25 per cent. of the solid salt, and acidified with 12 per cent. of hydrochloric acid. This increases its power and is a harmless addition. I found about the same proportion in liquid chloralum. Compared with

liquid chloralum in deodorizing sewage it was found to be about four times the strength, and it can certainly be produced for half the price.

The sample of powdered chloralum used in the urine and blood experiments was found to contain about 3 per cent. of chloride of iron, which accounts for part of its deodorizing property. I was first led to notice the disinfecting power of chloride of calcium by using it in urinals. There is always great difficulty in keeping urinals in houses free from offensive odor; this is entirely obviated by putting a lump of chloride of calcium in the urinal; it lasts a long time, as it dissolves very gradually, and keeps the urinal perfectly free from odor.

For general household purposes, however, the liquid form is more convenient, and I propose to give the combination I have described the name of chloricalcium, which is shortly and sufficiently descriptive of its composition.—*British Pharm. Confer.*, 1872.

TINCTURE OF CALABAR BEAN.

BY R. ROTHER.

Eserine, the alkaloid, is the active principle of calabar bean. Alcohol, strong or dilute, extracts the virtue of the bean, but water alone effects this less completely. When treated with strong alcohol the substance must be in a very fine powder, and requires a preliminary digestion with the menstruum before proceeding with the percolation; otherwise the exhaustion will not be perfectly attained. The original solid material is impervious to strong alcohol, and since the solvent effect of this depends upon surface action mainly, hence a coarse powder is wholly inapplicable for the purpose of extraction with this liquid. The pulverization of calabar bean is rather difficult in a small way, on account of its hardness and peculiar structure, and, moreover, great care must be exercised in the operation to avoid dusting, by reason of the poisonous character of the drug; consequently, a process which admits the application of a coarse powder together with a weaker alcohol would be much more desirable than the method in present use.

The employment of acetic acid as a part of the menstruum, results in the conversion of the alkaloid into soluble acetate; but a weak alcohol directly applied to a coarse powder does not appear to act favorably; the solution legumin and the unchanged starch interfere with the process.

Water swells the material, dissolving the legumin, and if the mixture is allowed to stand in a warm place for a few days it will become putrid. If however a small quantity of acetic acid be first added the legumin will not dissolve, but shortly the vinous fermentation will begin, resulting in the copious evolutions of carbonic acid, the disappearance of the starch and total disintegration of the original structure. By this change the alkaloid is exposed and easily and completely extracted by the acetic acid. After a few days, and rather before the end of the vinous fermentation, an equal volume of strong alcohol is added to the mixture and the maceration continued several days. It now becomes necessary to separate the liquid from the insoluble residue and complete the exhaustion. The process is therefore finished by percolation. For this purpose it becomes necessary, which is indeed a decided advantage in all percolations, to produce a solid substratum of coarse powder. Such is effected in this case by pouring part of the mixture upon a muslin strainer, separating the liquid by pressure, and forming a solid layer several inches high in the bottom of the percolator with the residual remnant on the strainer. Upon this foundation the remaining mixture is poured, together with the strained liquid, and then followed by a mixture composed of equal measures of strong alcohol and water until the required volume of percolate has passed. The preparation has a deep amber tint.

The tincture should conform in the proportion of the solid material with most other tinctures, and therefore contain 2 troy ounces of the bean to the pint of finished product.

The process is as follows:—

Take of Calabar bean, No. 50 powder...	16 troy ounces.
Acetic acid.....	half a fluid ounce.
Strong alcohol.....	of each sufficient.
Water.....	of each sufficient.

Mix the acid with three pints of water; pour this upon the powder and set the mixture aside for a few days in a warm place. Then add to it three pints of strong alcohol and macerate it a few days longer. After this pour part of the mixture upon a muslin strainer; press the liquid out, and pack the residue of the strainer firmly into a cylindrical glass percolator having a broad base; pour on to this foundation the rest of the mixture together with the strained liquid, and then a mixture of equal parts of strong alcohol and water, until eight pints of percolate has passed.—*Chicago Pharmacist.*

ADMINISTRATION OF PHOSPHORUS.

Phosphorated oil (huile phosphorée) is a preparation of the French Codex, of which the following is the formula:—

"Phosphorus..... 2
Oil of sweet almonds.....100

"Put the oil into a bottle which it will nearly fill, and introduce the phosphorus. Heat in a water-bath for 15 or 20 minutes, agitating briskly from time to time. Keep the bottle closed during the operation, except at the commencement, when a passage for the air inside should be made by means of a paper placed between the neck of the bottle and the stopper. Let the solution cool and deposit, and then decant the clear oil into small, well-stoppered phials exactly filled."

There is also an "oleum phosphoratum" in the new German Pharmacopœia, similarly prepared, in which, however, the proportions are: "phosphorus, well dried, 1; oil of almonds, 80." The preparation should be "limpidum, fumans, phosphorum redolens."

The subject of the solvent of phosphorus best suited for internal administration was studied by M. Dujardin-Beaumetz in 1868. He pointed out that phosphorus is soluble in sulphide of carbon, ether, chloroform, and oil. Of these the first, notwithstanding its great solvent power (according to Vogel dissolving eighteen times its own weight of phosphorus without losing its fluidity), is excluded, in consequence of its effects upon the system. Alcohol, also, he rejected, in consequence of the small proportion it dissolves (according to Buchner, 1 part in 320 cold alcohol, sp. gr. .799). Solutions in ether, chloroform, and oil were tried in the form of capsules, made to contain 1 milligram of phosphorus in each. The quantity of ether required was found to produce injurious effects, and was quickly abandoned. It may be remarked here that a case was mentioned at a meeting of the Société de Pharmacie, in April, 1870, where severe symptoms of poisoning followed the administration of 4 grains of phosphorated ether. It is also stated by Brugnatelli that the ethereal solution undergoes decomposition in the course of time. Chloroform, according to M. Beaumetz, dissolves easily two per cent. of phosphorus, and, therefore, 1 milligram doses could be administered in capsules containing 10 centigrams of the solution. Continued use of these capsules led, however, to considerable disturbance of the system, a result which, although at first referred to the phosphorus, he afterwards believed to be due to the chloroform. He considers the phosphorized oil to be the best preparation, and as many as twelve or thirteen capsules of this oil have been taken daily by patients without inconvenience. But an objection

exists in the deposit of insoluble phosphorus which gradually forms in them; and M. Beaumetz has proposed to use phosphide of zinc, prepared by bringing phosphorus vapor into contact with melted zinc, in an atmosphere of dry hydrogen.

The deposit that occurs in the phosphorated oil of the French Codex was investigated by M. Méhu. In a paper read before the Société de Pharmacie, at Paris, in May, 1861, he states that it is the result of the action of the phosphorus upon the albumen, resin, and other organic matters present in ordinary oil of almonds. These deposits are yellow, becoming reddish by exposure to light, and vary in quantity with the temperature and the quality of the oil; and since they carry down some of the phosphorus, the strength of the preparation is thus liable to variation. He proposes, therefore, to submit clear almond oil to a temperature of 150° C. in a porcelain capsule for about a quarter of an hour; then for ten minutes to 200° C. or 250° C. By this means water is at first driven off, and then instable organic matters are destroyed or volatilized. The superheated oil deposits slightly after standing some time, or it may be filtered; it will then produce an absolutely clear and stable solution of phosphorus.

According to M. Méhu, sweet almond, olive or poppy-seed oils will dissolve easily one-eightieth of their weight of phosphorus. He therefore proposes that only one part of phosphorus to 100 parts of oil, instead of the two parts of the Codex, should be used. Phosphorated oil of this strength is strongly luminous in the dark; but this luminosity may be entirely destroyed by the addition of a small quantity of ether, or of any of the essential oils not containing oxygen, such as bergamot, citron, copaiba, lavender, mace, mustard, rosemary, turpentine, etc. Colza, rape, beechnut, linseed, and brown cod-liver oils each dissolve one-seventieth of their weight of phosphorus. Castor oil dissolves one part in one hundred and five. Cacao butter dissolves one per cent.; but if a colorless product be required, it should be treated as recommended for the oil of sweet almonds.

Dr. Radcliffe has recommended the following formula for gelatinized phosphorus pills:—

"Phosphorus..... 6 grains.
Suet.....600 „

"Melt the suet in a stoppered bottle capable of holding twice the quantity indicated; put in the phosphorus, and when liquid agitate the mixture until it becomes solid; roll into 3-grain pills, and cover with gelatine."

The following formula by Soubeiran of a "potion phosphorée" is

given by Dorvault as the best method of administering phosphorus internally:—

"Phosphorated oil..... 8
Gum arabic..... 8
Peppermint water.....100
Syrup 60

Make an emulsion."—*Pharmaceutical Journal and Transactions.*

Cod-Liver Oil Emulsion.—A very agreeable emulsion of cod-liver oil is made as follows: Gum tragacanth, 8 parts; cold water, 500 parts. To this mucilage cod-liver oil is added in any proportion, and thoroughly mixed by agitation. To every 30 parts of this, 4 parts of alcohol, aromatized with oil of bitter almonds, can be added.—*Jour. de Pharm.*

TO DISTINGUISH EUROPEAN AND ASIATIC RHUBARB.

Dr. Cauvet states that this can be done by making a section of the rhubarb with a sharp knife, moistening it, and attentively examining it.

European Rhubarb.—The surface marked by alternate red and white lines radiating from the centre. These lines are, in cylindrical sticks, a little way from the periphery, but in flat pieces very near the periphery, intersected by a brown zone, which is sometimes interrupted.

Muscovite Rhubarb.—The surface offers on a whitish ground, yellow, sometimes scarcely perceptible, long and short anastomosing lines, often interrupted by radiating systems. These star-like masses are roundish, or long, and of various sizes; their rays are, near to the middle point, clear yellow; further out, brownish. The major lines have a general course to the periphery, marked by the anastomoses, irregularities, and star clusters.

Chinese Rhubarb.—The section presents clear yellow rays which, in much bent lines, pass from the centre to the circumference. These lines often appear to anastomose, and to form irregular stars, whose outer part is composed of more rays than their inner. This is especially seen in the cambium zone. As in the Russian rhubarb, between the radiating lines there are sometimes irregular stars. — *Vierteljahrsschrift für prakt. Pharm.* Heft 1, 1873.

Iodal, a new Anæsthetic.—Guyot proposes iodal as a new anæsthetic. It was discovered by Armé, and is made by treating iodine

with a mixture of absolute alcohol and sulphuric acid. It is a colorless, oily liquid, smelling like chloral, and converted by alkalies into iodoform and formiates. The dose is from 1 to 2½ grammes.—*Ibid.*

Analysis of the Gettysburg Katalysine Water.—By Prof. F. A. Genth.—One gallon of 231 cubic inches contains—

Sulphate of	Baryta	trace.
" "	Strontia	0.004.27 grains.
" "	Lime	0 831.45 "
" "	Magnesia	6.779.40 "
" "	Potash	0.208.36 "
" "	Soda	2.467.76 "
Chloride of	Sodium	0.657.90 "
" "	Lithium	trace.
Bicarbonate	of Soda	0.704.57 "
"	" Lime	16.408.15 "
"	" Magnesia	0.542.60 "
"	" Iron	0.035.85 "
"	" Manganese	0.006.69 "
"	" Nickel	trace.
"	" Cobalt	trace.
"	" Copper	0.000.50 "
Borate of Magnesia		0.034.92 "
Phosphate of Lime		0.006.79 "
Fluoride of Calcium		0.009.54 "
Alumina		0.003.80 "
Silicic Acid		2.030.78 "
Organic Matter, with traces of nitric acid, &c		0.708.70 "
Impurities suspended in the water, like clay, &c		1.100.69 "
		32.542.72 "

Gun Cotton for Collodion.—Charles H. Mitchell.—A number of experiments were tried, with the view of ascertaining the relative proportions of cotton and acid, together with the proper time for maceration necessary to produce a cotton which should combine the largest yield with the highest explosive power and solubility. The following formula was at length adopted:—

Raw cotton	2 parts
Carbonate potassa	1 "
Distilled water	100 "

Boil for several hours, adding water to keep up the measure; then wash until free from any alkali, and dry. Then take of—

Purified cotton	7 oz. av.
Nitrous acid (nitric, saturated with nitrous acid), s. g. 1.42	4 pints.
Sulphuric acid, s. g. 1.84	4 "

Mix the acids in a stone jar capable of holding two gallons, and when cooled to about 80° Fahr., immerse the cotton in small portions

at a time; cover the jar and allow to stand 4 days in a moderately cool place (temp. 50° to 70° Fahr.). Then wash the cotton in small portions, in hot water, to remove the principal part of the acid; pack in a conical glass percolator, and pour on distilled water until the washings are not affected by sol. chloride barium; drain and dry. Yield, 11 oz. av.

This cotton is perfectly white, of a harsh, gritty fibre, very explosive, leaving scarcely any ash, soluble in ether, ether fortior, acetic ether, glacial acetic acid, and in mixture of alcohol and ether, varying from 1 part ether to 3 parts alcohol to pure ether itself. If a cotton superior to this is desired, it may be obtained by treating this cotton with an additional proportion of the mixed acids, washing and drying as before. The cotton gains about one per ct. in weight, becomes perfectly soluble, and is so free from any ash as to scarcely scorch a sheet of white paper it may be burnt on. Both this and the previous gun cotton may be ignited on gunpowder without exploding it. The advantages claimed for this cotton over that of the U. S. P. are that it is perfectly soluble, very explosive, cheap; its manufacture is much more easy, requiring but little time and attention, and turning out a superior product with large yield and less cost.—*Amer. Journal of Pharmacy.*

Gallic Acid containing Iron.—Hager speaks of some white gallic acid which became decidedly tinted on solution in distilled water. It was found to contain a minute quantity of oxalate of iron; and as distilled water contains carbonate of ammonia, the color was brought about by the decomposition of the iron salt.—*Vierteljahrsschrift für prakt. Pharm.* Heft 1, 1873.

Preservation of Milk.—Dr. Schwabe asserts that the souring of milk is greatly hindered by the addition of 1 drop for every ounce of ethereal solution of oil of mustard.—*Ibid.*

To Cover Bitter Tastes.—Glycyrrhizin has the property of instantly causing the taste of quinine, aloes, colocynth, quassia, and other bitter substances to disappear. There does not appear to be any chemical change. An analogous action is seen in the influence of bitter almonds upon musk, and of oil of anise upon valerian. When musk is rubbed with distilled water of bitter almonds the odor of the musk soon disappears, but, when the mixture is allowed to stand, reappears as the oil of almonds volatilizes. The odor of bitter almonds masks but does not destroy that of the musk.—*L'Union Pharmaceutique*, December, 1872.

Explosion of Nitrate of Potash and Acetate of Soda.—M. Violette discovered accidentally that the above-named substances, in equal parts, form a mixture which, under the influence of heat, explodes with great violence, in a manner resembling gunpowder.

Phosphorescence of the Roots of the Florentine Iris.—Landerere states that on digging up the roots of some blooming Florentine iris at night, he was astonished at their phosphorescence. He tested the matter on three different nights, and found the roots always either emitting the phosphorescent light from their whole surface, or from points on it.—*Vierteljahr. prakt. Pharmacie.* Heft 1, 1873.

Tests for Ozonized Water.—Carius states that water containing ozone should answer the following tests :—

1. It should have the strong, peculiar odor of ozone.

2. Solution of iodide of potassium becomes brown, owing to its decomposition, when the ozone-water is added to it. Finally the iodine is converted into iodic acid by the ozone, and will not, as at first, react with starch.

3. If the ozonized water be put into a closed vessel with the solution of the sesquioxide of thallium, after a time the brown oxide of thallium will be deposited.

4. It bleaches indigo solutions, and turns those of guaiac resin blue.

5. On exposure to the air it loses its smell and active properties.—*Ibid.*

Adulteration of Tea.—According to Consul Medhurst, of Shanghae, the Chinese have recently taken to largely adulterating green tea with willow leaves prepared like the genuine article.—*Ibid.*

Benzoic Acid in Gas-Water.—H. Reinsch states that he has obtained crystallized benzoic acid from gas-water.—*Ibid.*

A CHEAP CITRATE OF MAGNESIA.

BY C. G. POLK, M.D.

℞.	Carb. magnesiæ	℥ xii.
	Acidi citrici	℥ iii.
	Olei limonis	gtt viii.
	Potassæ carb	℥ iv.
	Syrupi	℥ xii.
	Aquæ, q. s. or	℥ xss.

Dissolve the citric acid in ten and one-half ounces of water. Rub

the carbonate of magnesia carefully with the oil of lemon, and reduce to a powder; slowly add two ounces of the solution of citric acid and triturate into a pasty citrate of magnesia. Slowly add the remainder of the acid and stir until the solution is completed; add the syrup and mix. To each bottle add four ounces of the solution, eight ounces of water, and thirty-five grains of bicarbonate of potassa, and tightly cork.

EMULSION OF COPAIBA.

BY C. G. POLK, M.D.

Copaiba Emulsion.

℞.	Copaibæ	ʒ i.
	Liq. potassæ	ʒ ii.
	Spirit. ætheris nitrosi	ʒ xii.
	Pulv. extract. glycerrh	ʒ iv.
	Pulv. acaciæ	ʒ iii.
	Syrupi	ʒ ii.
	Ol. anisi	
	Ol. gaultheriæ	āā gtt. xl
	Tinct. cardamomi comp	ʒ ss.
	Aquæ q. s. ad ft	ʒ viii.

First rub the acacia and liquorice thoroughly together, add oils of gaultheria and anise and incorporate them, then the liquor potassæ, then the copaiba, and rub together into a pasty emulsion; then add the syrup, tinct. of cardamom comp., sweet spirits of nitre, and water sufficient to make eight ounces, stirring carefully after the introduction of each.

PREPARATION OF THE PHOSPHATES OF IRON, STRYCHNIA AND QUINIA.

BY C. G. POLK, M.D.

Under the name of syrup of the phosphate of iron, quinia and strychnia, there are three distinct preparations made, the difference in their chemical combinations being sufficiently distinct to constitute them three distinct remedies,

Tribasic phosphates, metaphosphates and pyrophosphates.

Easton's formula is the one most used, and the one physicians mean when designating no other process in their prescriptions. It is the syrups of the tribasic phosphates. The protosulphate of iron is decomposed by tribasic phosphate of soda represented by 2 Na O., HO, PO_5, and dissolved in dilute phosphoric acid (3 HO) PO_5.

Polk's formula produces a syrup of the monobasic phosphates, with a large excess of acid, and which might justly be termed a syrup of the superphosphates of iron, quinia and strychnia. The phosphate of soda which is in excess is changed by heat gently applied from a common phosphate into a metaphosphate. Instead of using the bibasic dilute phosphoric acid (3 HO) PO_5, the glacial phosphoric acid, (HO) PO_5 is used, dissolved in boiling water, and the freshly precipitated phosphate of iron is dissolved to saturation in the acid solution.

The syrup of the pyrophosphate contains the ferric salt in the form of 2 Fe_2 $O_3$3 PO_5+9 HO, containing a larger per cent. of acid than the tribasic phosphate and a smaller per cent. of iron. This syrup is the one most convenient for druggists, as it can be easily made by dissolving the iron salt in hot water, dissolving the quiniæ by the aid of a little phosphoric acid, dilute, adding the strychniæ dissolved by a few drops of acetic acid, and the syrup, when the work is finished.

Aitkin thus publishes Easton's formula:—

℞.	Ferri sulph.	℥ v.
	Sodæ phosph.	℥ j.
	Quiniæ sulph.	grs. xcii.
	Acid. sulph. dil.	q.s.
	Aquæ ammoniæ.	q.s.
	Strychniæ.	grs. vi.
	Acid. phosph. dil.	℥ xiv.
	Sacchar. alb.	℥ xiv.

Dissolve the sulphate of iron in an ounce of boiling water, and the phosphate of soda in two ounces of boiling water. Mix the solutions and wash the precipitated phosphate of iron until the washings are tasteless. With sufficient dilute sulphuric acid dissolve the sulphate of quinia in two ounces of water. Precipitate the quinia with ammonia water and carefully wash it; dissolve the phosphate of iron, and the quinia thus obtained, as also the strychnia, in the dilute phosphoric acid. Then add the sugar, and dissolve the whole without heat.

Mr. Charles Bullock's formula (*Journal of Pharmacy*, 1869). This is precisely the same as Easton's as to quantity of each and every article, but deviates from Easton in mode of procedure. The manipulation is

as follows: Dissolve the phosphate of soda and the sulphate of iron each in four ounces of warm water. Mix the solutions and collect the precipitate on a paper, filter, and wash with warm water; remove the filter from the funnel and press carefully between folds of bibulous paper until no more water is absorbed by the dry paper. Having dissolved the sulphate of quinia in four ounces of water, add a weak solution of aqua ammoniæ, stirring constantly until a slight excess is added. Collect the precipitated quinia on a filter paper and proceed as with the iron salt. Both these precipitates will readily detach themselves from the wet filter without loss, if the pressing is carefully done. Dissolve the quinia and the strychnia in eight ounces of the dilute phosphoric acid and the iron salt in the remainder of the acid, mix the solutions, filter, and then add the sugar. It is preferable to dissolve the sugar first, and then filter.

I have attempted to follow Mr. Bullock's process with unfortunate results in every instance, perhaps on account of unskilful management on my part. But I have found in every specimen I have examined, traces of the sulphate of soda, sulphate of iron, and precipitated flakes of quinia and strychnia, whether the specimen were made by myself or others; while Easton's formula has never failed me, and cannot be very easily improved for a syrup of the specified strength when the amount of phosphoric acid is not objectionable.

Sometimes, however, it is important to avoid the large amount of acid present in Easton's formula, and yet give the ingredients which compose the syrup.

To effect this, I devised, some five or six years ago, the following formula, which has proved satisfactory:—

℞.	Liq. ferri tersulphatis	ʒ xiii.
	Sodæ phosphatis	ʒ xiv.
	Acid. citrici	ʒ iss.
	Potassæ bicarb	ʒ iss.
	Quiniæ sulph	grs. lxiv.
	Strychniæ citratis	grs. ii.
	Sacch. alb	℥ x
	Aquæ dest	q. s.

Dissolve the phosphate of soda in ℥ iv. of boiling water, and mix it with the solution of tersulphate of iron; wash the precipitate until the washings are tasteless, place the magma in a small evaporating dish and add the citrate of potassa made by dissolving the citric acid in ℥ ss. of hot water and saturating with the potassa; add water ℥ iv. and apply gentle heat over a sand-bath until it is all dissolved. Dissolve the quinia and strychnia in 2 oz. of water by aid of citric acid, apply

gentle heat until dissolved. Last, add sufficient water to measure sixteen ounces.

Syrup of the Superphosphate of Iron, Quinia and Strychnia, or Syrup of Metaphosphates Comp.

℞.	Ferri persulphatis	℥ xxv.
	Sodæ phosphatis	℥ vii.
	Acidi phosphorici glacialis	℥ iv.
	Quiniæ sulphatis	ʒ xvj.
	Acidi sulphurici diluti	q. s.
	Aquæ ammoniæ	q. s.
	Strychniæ citratis	grs. viii.
	Bruciæ	grs. iij.
	Sacchar. alb	℥ xxiv.
	Aquæ destillatæ	q. s.

Dissolve the persulphate of iron in six ounces of boiling water and the phosphate of soda in eight ounces of boiling water, and mix the two in an opaque porcelain jar, of the capacity of a half-gallon, on a fine linen filter, and instantly seal with an air-tight cover. The phosphate of iron will be thrown down, of white color. Let stand about fifteen minutes, and pour off the supernatant liquid and rapidly pour on warm water so as to keep the magma all the time covered, to prevent oxidation from contact with the air, until the washings cease to be affected by a solution of the chloride of barium. Dissolve ℥ ii. glacial phosphoric acid in ℥ iv. of boiling water and keep the solution at the temperature of 200°, add the precipitated phosphate of iron, when the latter is dissolved let cool, when the superphosphate of iron will congeal into a mass of pillular consistency. Dissolve the remaining two ounces of phosphoric acid in twelve ounces of distilled water on a sand-bath, and add enough distilled water to make the solution measure two pints, into which dissolve the superphosphate of iron.

Dissolve the sulphate of quinia in six ounces of water by the aid of dilute sulphuric acid, and precipitate with a weak solution of aqua ammonia slowly added to produce a slight alkaline excess, and wash carefully until the quinia is free from any impurity. Then dissolve the quinia thus obtained, and also the citrate of strychnia, in the dilute phosphoric acid with the iron, add the sugar and dissolve without the aid of heat by constant agitation.

After standing a few days, there will be found a considerable precipitate of phosphate of iron, with some quinia and strychnia.

Remove this precipitate, mix it in twelve fluid ounces of hot water, and stir vigorously for a few minutes. The quinia and also the strychnia, which is very minute in quantity, will be dissolved. Pour off the liquid

and let cool. Upon cooling, the quinia and strychnia will be precipitated very nearly, but a few drops of aqua ammoniæ will scarcely leave a trace in solution. Carefully wash the quinia and strychnia thus obtained and return to the syrup. After this the syrup is nearly permanent and the precipitate unimportant.

Wash the phosphate of iron carefully with warm water, press between folds of bibulous paper, and bottle for other uses.

The syrup of the superphosphate of iron, quinia and strychnia contains about four grains of the superphosphate of iron, one grain of the phosphates of quinia and one thirty-second of a grain of the phosphates of the ignatia alkaloids, strychnia and brucia in combination. Dose: A teaspoonful.

Perhaps it would be better and more economical to dissolve the quinia and strychnia and brucia in ʒ vii. of the dilute monobasic phosphoric acid, and the superphosphate of iron to saturation in the remaining dilute phosphoric acid. But I have been so well pleased with the result obtained from the process of the formula given that I have let well enough alone.

A porcelain funnel with a stop-cock at the very beginning of the tube of the funnel would answer just as well as the porcelain jar with its stop-cock and spigot which I use; care being taken that the muslin rests upon the valve, so that none of the precipitate gets between the filter and the valve to be afterwards washed away by the subsequent stream of water. My preparation is a better chalybeate than Easton's, while Easton's is a better general tonic. My preparation of the bibasic phosphates only differs from Easton's in containing twice the amount of iron salt, and having the syrupy phosphoric acid used instead of the dilute acids. As it has been published elsewhere I need not reproduce it. The bibasic phosphate preparation is more easily tolerated by disordered digestive organs, and often serves an excellent purpose where the others cannot be taken.

Removal of Plaster of Paris Bandages.—This may be readily accomplished by wetting them with a strong solution of common salt. It causes the plaster to crumble, so that the bandage can be readily cut. It is also useful to clean the hands and nails of the operator.—*Boston Medical and Surgical Journal.*

Butyric Acid as a Preventive of Phosphorus Reactions.—It being desired to examine a fermented mass of sugar, milk, coffee, and bread, for phosphorus, all the reactions failed, even with the Mitscherlischen apparatus. Roussin, however, found that the free butyric acid masked the phosphorus; for when this was neutralized by

carbonate of potash, testing in the Mitscherlischen apparatus afforded very evident proof of the presence of phosphorus.—*Vierteljahrsschr. für Prakt. Pharm.*

NOTES ON PEPSIN, BISMUTH, AND ELIXIR OF PEPSIN AND BISMUTH.

BY E. SCHEFFER.

Several facts which I published in my essay (*Am. Jour. Phar.*, Feb., 1872), impressed on me the impossibility of a preparation such as elixir pepsin, bismuth (and strychnine.) I do not want to speak again about the presence of alcohol in a solution containing pepsin, as I have repeatedly given the results of my experiments, which prove beyond doubt that pepsin and alcohol, particularly when the latter amounts to a certain percentage, are incompatible.

The main objection I intended to bring against such an elixir, prepared with ammonio-citrate of bismuth in a neutral or alkaline solution, is the neutral or slightly alkaline state. My experiments prove clearly that pepsin, in neutral solution, does not keep, and that in alkaline solution it loses its digestive properties.

The physician might wish for a combination of pepsin and bismuth in the liquid state, but another question is, can such a combination be made, or can it exist? Those that manufactured the elixir of pepsin and bismuth (and strychnine), were satisfied to know that they used pepsin in its preparation, but whether it was in it or in an active form never troubled them, as they never tested for it. They could conscientiously put their label on the bottle, and maintain that they used pepsin in its preparation. The physician prescribed it in good faith, because he had confidence in the firm who made it, and in the name by which the preparation was designated.

Having tested several elixirs of pepsin and bismuth that I could get hold of, I found that even after the addition of hydrochloric acid not the least quantity of albumen was dissolved.

Thinking that an acidulated bismuth solution might, in combination with pepsin, prove more efficacious containing the pepsin in its active form, my first aim was to find a bismuth salt for that purpose.

Crystallized ternitrate of bismuth dissolves in glycerine, which solution can be diluted with a considerable quantity of water before the subnitrate is precipitated. This salt I dropped from the list, as the solution is too acid and tastes too styptic.

Freshly precipitated subnitrate of bismuth, prepared with 1 part of crystallized ternitrate with 40 parts of water, was put on a filter, and when entirely drained added to glycerine, in which it dissolves, forming a clear solution, but on the addition of water the clear solution becomes milky after some time.

I now tried the action of acids on ammonio-citrate of bismuth. For that purpose I made two solutions of ammonio-citrate of bismuth of the same strength, with the difference that the one solution was made with water alone, and the other with a mixture of glycerine and water. To these solutions were now added different acids, and the following results obtained: Mineral acids gave in both solutions immediately a precipitate. By the addition of organic acids, such as acetic, lactic, and citric, both solutions kept clear, but after a lapse of several hours the pure water solutions became milky, and by longer standing deposited a white precipitate, while in the solutions containing glycerine an opalescence did not show itself before 24 hours.

Judging that a small quantity of organic acid, sufficient to dissolve the pepsin, would not give even an opalescence in a solution of ammonio-citrate of bismuth containing glycerine, I thought that a glycerole could be made containing pepsin as well as bismuth, etc.; but by mixing the pepsin solution with the solution of the bismuth salt, the pepsin was precipitated in the same characteristic form as it is precipitated from its solutions by chloride of sodium.

Having at first intended to make the glycerole contain in the pint 128 grains ammonio-citrate of bismuth, 256 grains of saccharated pepsin (respectively 1 and 2 grains to the fluid drachm), 1 fluid drachm of lactic acid, 8 fluid ounces glycerine, and 8 ounces of water, I thought that by making it only half as strong in bismuth and pepsin it might answer, but the pepsin was in this instance also precipitated. The ingredients were put together in four different ways, but in all with the same result.

This negative result proves clearly that the pepsin is precipitated from its solution by the bismuth salt, and as I have proven in my essay (Feb., 1872), that a watery solution of pepsin is precipitated by chloride of sodium in the same way as an acidulated one, we must infer that the bismuth salt acts the same, and that therefore the elixir of pepsin and bismuth, as it was made, *cannot contain any pepsin.*

Abstracting, therefore, from the alcohol, and not speaking of the neutral or alkaline solution, the elixir of pepsin and bismuth is an incongruity, and when patients have derived any benefit from it, it was from the bismuth it contains and the stimulating effect of the spirits, but surely not from the pepsin, *as it does not contain any pepsin.*

In the same number of the same journal Mr. Jas. S. King says on the same subject as the above :—

For a year or more past I have dispensed an elixir of pepsin, bismuth, and strychnia, made by first thoroughly triturating 256 grains Boudault's pepsin with water, then filtering from the starchy matter, and to the filtrate adding syrup, sherry wine, glycerine, and orange-flower water. Next a solution of strychnia is made in water by the aid of a little citric acid, and this added to the solution of pepsin. Then 64 grains of ammonio-citrate of bismuth are dissolved in water by the aid of gentle heat, and a few drops of aqua ammoniæ added to clear the solution, care being taken to use no more of the alkali than is absolutely necessary. This solution is added to that of the pepsin and strychnia, making, when finished, 16 fluid ounces.

This elixir is slightly acid from the sherry wine, and it is necessary that it should be acid, not only on account of the pepsin being quickly injured by alkalies, but that the strychnia may be held in perfect solution.

In one fluid ounce of this elixir, which has been made about thirty days, and which contained—

16 grains Boudault's pepsin,
4 grains ammonio-citrate of bismuth,
1-16 grain strychnia,

was digested some coagulated albumen at a temperature of 100° F. for six hours. There was dissolved six grains.

2d. One fluid ounce of the same elixir, to which was added six drops of hydrochloric acid, and digested with coagulated albumen for the same time, and at the same temperature, dissolved twenty and one-half grains.

3d. One and one-half fluid ounce of wine of pepsin, made of six drachms of sherry wine, and the remaining six of syrup, glycerine and distilled water, and containing sixteen grains Boudault's pepsin, treated as above, for six hours, dissolved thirty grains of coagulated albumen.

4th. Sixteen grains of Boudault's pepsin, triturated with one ounce distilled water, filtered from the starchy matter, coagulated albumen added to the filtrate, and digested at 100° F. for six hours, dissolved five and three-tenth grains.

In the second case the addition of hydrochloric acid increased the digestive action of the elixir, although it caused a precipitation of the bismuth salt; but this more nearly represents the result following the ingestion of the elixir, and the precipitation of the bismuth is not objectionable, as it is frequently given in powder.

Senna-Coffee.—It may not be generally known that the disagreeable taste of infusion of senna may be completely removed by the addition of coffee in its preparation.

For a full dose, take a teacupful (say one ounce) of senna leaves, a heaped teaspoonful (say two drachms) of freshly-parched and ground coffee, and boiling water a sufficient quantity to make a teacupful (say four fluid ounces) of infusion—steep till of sufficient strength.

To the infusion thus prepared, add milk and sugar to taste. The drink will be quite acceptable to adults, and not disagreeable to children.—*Southern Med. Record.*

Boldina.—Bourgoin & Verne have discovered an alkaloid for which they propose the name of boldine, in the Chilian tree Peumus boldus. The method of obtaining it is given in *L'Union Pharmaceutique*, November, 1872. Its physiological properties have apparently not been investigated.

Extracts in Powder (*Boston Medical and Surgical Journal*).—It is sometimes very desirable to administer the solid extracts (say *extract of hyoscyamus*) in the form of a powder.

All such extracts may be reduced to fine powder by patiently rubbing them (say two or more hours) in a mortar with an equal quantity, by weight, of calcined magnesia.

Extract of gentian yields the slowest to this manipulation.

A Simple Method of Determining the Amount of Alcohol in Chloroform.—A. C. Oudemans, Jr., has discovered that the solubility of cinchonia in pure chloroform is so much less than in that containing some alcohol, as to make it possible to determine the quantity of the latter in any such mixture by testing the solvent power. He gives the following table:—

Per cent. of alcohol.	Per centage of Cinchona, by weight, at 17° C.	Difference.
0 per cent.	0.28	6
1 "	0.90	62
2 "	1.46	56
3 "	1.99	53
4 "	2.49	47
5 "	2.96	43
6 "	3.39	40
7 "	3.79	36
8 "	4.15	33
9 "	4.48	28
10 "	4.76	..
11 "	....	..

The cinchonia is best prepared by precipitating a weak alcoholic solution of a pure salt of the alkaloid by ammonia. In that way a loose mass of microscopic crystals are obtained which are readily dissolved.—*Zeitschrift Oester. Apothek-Vereines*, February 20, 1873.

Coerulignon.—C. Liebermann made a communication, describing this crystalline substance, of a beautiful blue color, before Natural History Congress, at Leipsic. It is obtained during the purification of the crude acetic acid obtained from wood. An abstract of this communication may be found in the *Zeitschrift Oester. Apothek-Vereines*, February 1, 1873.

On a Simple Method of Detecting Water or Alcohol in Ether.—According to Bötteger of Frankford, when about 10 c. c. of pure sulphuret of carbon is shaken in a test-glass with ether, if the latter contains no water, a clear solution results, but if any water be present, the resulting fluid is milky.

On the other hand, if some pieces of caustic potash are shaken with ether in a test-glass and the whole allowed to stand, if any alcohol be present, after 24 hours a yellowish color will be developed.—*Zeitschrift Oest. Apot.-Vereines*, December 20, 1872.

ACTION OF BORAX ON FERMENTS OF THE DIASTASE GROUP.

In a note recently presented to the French Academy, M. Dumas communicated the following interesting information relative to the action of borax upon the ferments of the diastase group:—

Solution of borax coagulates beer-yeast, and the supernatant liquor does not invert cane-sugar as yeast-water does. It dissolves albuminoid membranes; those, for example, which separate from white of egg when suspended in water.

Solution of borax neutralizes the action of yeast-water upon cane-sugar. If solutions of sugar and yeast be placed together in one tube, and solutions of sugar, yeast, and borax in another, the first will quickly give signs of inversion; the second will not.

Borax also neutralizes the action of synaptase. It is known that the bitter almond contains amygdalin, and the sweet almond the synaptase, which, mixed with the amygdalin, produces the essence of bitter almonds, accompanied by prussic acid. It suffices to suspend the meal of sweet almonds in the one instance in pure water, and in the other in a solution of borax, and to add amygdalin to both liquids, to demonstrate this influence. With pure water, the odor of essence of bitter almonds becomes increasingly manifest, and the presence of prussic acid becomes more and more evident by the formation of Prussian blue. With the solution of borax, neither is the odor of

essence of bitter almonds perceptible nor the formation of Prussian blue.

Borax neutralizes the action of diastase. If four tubes containing water and potato starch be kept at 70° C., the first without addition, the second with the addition of borax, the third with the addition of diastase, the fourth with the addition of both diastase and borax, it will be found that after several hours there will be no glucose present in the first and second; after the first quarter of an hour there will be a considerable and increasing quantity in the third; in the fourth, where the borax and diastase are both present, the conversion of the starch into glucose does not take place.

Malt suspended in water quickly yields an abundance of glucose if heated to 70° C., but the addition of borax arrests this action. With malt, water and borax, traces only of glucose are observed, which are probably due to its pre-existence in the malt.

Borax interferes also with the action of myrosin. Flour of black mustard suspended in water exhales almost immediately the odor of essence of mustard, which increases in strength. Suspended in solution of borax, the odor characteristic of mustard meal is perceptible, which is due to the presence of a trace of the essence already formed; but this does not augment, and there is nothing that recalls the known effects of water upon mustard, and the plentiful production of irritating vapors to which it gives rise.

So that borax, by a property as remarkable as unsuspected, neutralizes the action of yeast, synaptase, diastase, and myrosin. M. Dumas promises to make known its effects upon pepsine, and the bearings these curious reactions have upon the theory of ferments.—*Pharm. Journ. and Trans.*, January, 1872.

Detection of Morphia in Quinia.—The *American Journal of Pharmacy* publishes the following method:—Dissolve three grains of ferricyanide of potassium in a fluid ounce of water. Mix twelve drops of this solution with a fluid drachm of water, and add one drop of solution of ferric chloride. The reagent thus prepared is scarcely affected by a solution of pure quinia, but if one ten-thousandth part of morphia is present, a blue coloration is at once produced, and a larger quantity of morphia throws down a precipitate of Prussian blue. The absence of all coloration is proof of the absence of morphia. A blue color, however, does not prove the presence of morphia, as it may be produced by many other deoxidizing agents.

Chinese Treatment of Tetanus.—This mode of treatment of tetanus has been seen by English physicians in China and India to be

successful:—The patient smokes in a pipe a mixture of from twenty to twenty-five centigrammes of crude opium and tea or rose leaves, which are worked up with a small quantity of molasses. When smoking he must inspire as deeply as possible, and continue this operation until the narcotic influence is noticed. This continues then, as a rule, three or four hours. The smoking is repeated as soon as the tetanic symptoms reappear. In the mean time as much nourishment as possible is given. In using opium thus it must be remembered that its narcotic effect is somewhat neutralized by tobacco.—*Physician and Pharmacist.*

TOXICOLOGY.

THE EXISTENCE OF NICOTINE IN TOBACCO-SMOKE.

Dr. Emil Heubel has made an investigation of the above subject in Rosenthal's laboratory. By means of aspirateurs the tobacco-smoke was first drawn through a Liebig's condenser, the condensed liquid being caught in a glass vessel, and then through vessels containing distilled water, alcohol, dilute sulphuric acid, and, in some experiments, solution of potash. The smoke was by this process reduced to about half the original volume. The first liquid was in very small quantity, brownish, with a strong, disagreeable odor, sharp taste, and strongly alkaline reaction. Upon its surface was an oily layer. The water and alcohol acquired a similar but lighter brown color and alkaline reaction. The dilute sulphuric acid acquired a dirty cherry-red color.

With these preparations Heubel produced all the characteristic symptoms of nicotine-poisoning in frogs and warm-blooded animals. The strength of the preparations was different. The strongest was the liquid obtained by condensation. Nicotine therefore passes over with tobacco smoke and in considerable quantity, because the first liquid obtained from the burning of a single cigar was enough to kill a large frog.

The next question was to reconcile these results with the well-known fact that nicotine is rapidly decomposed by moderately high temperatures. Heubel found that if a 4–5 per cent. nicotine solution was placed in a water-bath and evaporated to dryness, the residue treated with water possessed no physiological properties. If, however, a salt of nicotine were similarly treated, the residue was found to have preserved all its properties. Entirely similar in its action was the liquid obtained by the condensation of the tobacco-smoke. It could be evaporated to a thick syrupy consistence or even to dryness upon the water-bath without losing its properties.—*Schmidt's Jahrbücher*, Band 156.

DETECTION OF BLOOD-STAINS.

Dr. Edward S. Wood reports that *Fres. Zeitsch. f. Anal. Chem.* (1872, ii. p. 244) contains a note from Dr. Helwig, contradicting a

statement made in the *Chem. Centralb.*, 1871, p. 37, that a solution of blood-pigment in iodide of potassium cannot be used for the production of blood-crystals, but only for spectroscopic examinations. It has long been known that a solution of iodide of potassium will extract from clothing the slightest trace of blood coloring matter, it being possible to obtain a solution suitable for testing even when the clothing has been washed and the stain is very old. In the present instance Dr. Helwig exhibited a specimen of hæmin-crystals which he had obtained by treating a piece of linen upon which a blood-stain had existed for 16 years, with a solution of iodide of potassium. The residue left after the evaporation of one drop upon a glass slide gave beautiful hæmin-crystals upon the application of Teichmann's test, when the remainder of the solution, examined by the spectroscope, gave an absolutely negative result.

Teichmann's test, the ordinary test for hæmin-crystals, is performed by rubbing upon the dried residue in a watch-glass, or on a microscope slide, a very small quantity of ammonic chloride or of common salt, adding to the mixture a drop of glacial acetic acid, and warming until bubbles form under the covering glass, showing that the boiling-point of the acetic acid has been reached. Upon cooling, crystals of hæmin can be detected by the microscope.

In the same journal (1872, i. p. 29) we find mentioned by H. Struve an additional test for blood-pigment, which is applicable to the testing of both urine and clothing-stains for blood. This test is based upon the precipitation of hæmatin from an acetic acid solution by tannic acid as tannate of hæmatin, and may be performed in the following way. To the urine or any other liquid suspected to contain hæmatin is added a little ammonia-water or potassic hydrate, then a solution of tannic acid, and finally acetic acid, to distinctly acid reaction. If hæmatin be present, a reddish-brown precipitate, tannate of hæmatin, is formed, which quickly settles, and can be very easily washed and collected on a filter. This precipitate, after drying, gives a residue with which we can obtain hæmin-crystals by performing Teichmann's test. This test is far superior to Heller's test for blood in the urine, in which the hæmatin is mechanically carried down with the earthy phosphates, after the addition of ammoniac or potassic hydrate. By the above method the author claims to have detected the presence of blood when all other reactions have failed: for instance, in urine when he could not detect the albumen by any of the ordinary tests. In 20 cc. of urine to which 0.023 per cent. of blood was added, a precipitate was obtained which permitted numerous examinations for hæmin-crystals to be made by Teichmann's test.

The same author (*Fres. Zeitsch.*, 1872, ii. p. 150) states that he has

separated from the blood two new coloring matters. One is soluble in alcohol and water, difficultly soluble in ether, and forms, when dry, a dark greenish-brown mass, which chars without puffing up, and, after ignition, leaves a residue, consisting of oxide of iron, phosphoric acid, and silica. It is precipitated from its solution in water by acids, and the application of Teichmann's test does not yield hæmin-crystals. The other pigment separates in the form of dark bluish-black microscopic crystals, reminding one of indigo. These crystals are insoluble in water, alcohol, ether, chloroform, and acids, but are soluble in alkalies with the production of a dark-brown solution. If precipitated from the alkaline solution by acetic acid, and the precipitate subjected to Teichmann's test, the result is the most beautiful hæmin-crystals. Concentrated sulphuric and nitric acids dissolve this pigment with a greenish-yellow color, concentrated hydrochloric acid and aqua regia decompose it, and glacial acetic acid is without action upon it, unless ammonic chloride has been previously added, in which case it dissolves it, forming a dark-brown solution, which, upon evaporation, yields large pure hæmin-crystals. After ignition, the residue consists of pure oxide of iron. These crystals he considers to be identical with Virchow's hæmatoidon. An elementary analysis of these pigments is promised.—*Boston Med. and Surg. Journ.*, Jan. 2, 1873.

Chloral Hydrate to Restore Blood-Corpuscles.—Prof. Filippo Pacini prepares suspected blood-stains for the microscope by immersing the matter in a solution of chloral hydrate (one part to ten of water). The corpuscles are softened without disintegration.—*Nuova Liguria Medica.—New York Medical Journal*, Jan. 1873.

ETHER-DRINKING IN NORTH OF IRELAND.

Mr. Morgan said he had taken the trouble of obtaining a letter from a gentleman in a northern town, which was the head-quarters of ether-drinking in the North, and he would read it to the Society:—

"'Ether' drinking is of very old date in this locality, even so far back as the time of Father Matthew's temperance movement, nearly a quarter of a century ago. It began then as a substitute for a more potent spirit, and from small beginnings it soon reached a very large consumption; in fact, becoming the general drink of the whole country. At first it was sold by one or two who kept shops for dispensing drugs, and were considered medical men, and after a little it was sold by almost all the shops in this town. One of those who first estab-

lished its use here is still living, and on speaking to him the other day he told me that at first the quantum taken was small, but very quickly it turned to more common use, and that he has known young men to come into his shop, and before they left, in a few hours to have drunk not less than six or seven ounces (I mean each person drank as much). Some would get over its effects very soon, owing to its volatility, it acting mostly as a carminative, and was, to use their own words, belched from the stomach; the others on whom it had not such effect would remain a long time in a stupid state, *but as yet none have suffered or died from the use of it.* He alone generally sold from nine to ten pounds of ether in the week. There were, I may say, at least a dozen others selling it."

In answer to my inquiries as to the effects of ether intoxication, or any bad results, the gentleman writes:—

"I have never known any ill effects, and I do not consider it as injurious as whiskey-drinking, neither, indeed, is it injurious at all to the general health. For upwards of twenty years I have known many tolerable consumers of ether, and they seem as well as ever; some of them would occasionally take so much as six, seven, or even eight ounces in the course of the day or night, but not as a constancy, taking whiskey too. It is now sold in the public houses, and is more drunk by young bold women to act as a carminative or stimulant; very few of the male population confine themselves to ether alone. They seldom use water in the drinking of ether, and one young man assured me that he was in the habit of taking a wineglassful at a draught without any inconvenience.

"There is no doubt that although ether leaves no permanent injurious effect on the health, still at the time it renders the drinker of any large quantity perfectly stupid and unconscious, more so, I should say, than when whiskey is used."—*The Doctor.*

BITE OF THE VIPER.

The *Gazette des Hôp.*, 12th and 24th of September, mentions several cases of bite of vipers. A man, æt. 47, was bitten on the 12th of April; three-quarters of an hour afterwards the physician found the patient pale and covered with cold sweat, with thirst and vomiting, but there was as yet no swelling. An incision was made to enlarge the bite, and the wife of the wounded man sucked the wound vigorously. An ammoniacal potion was recommended. The patient's strength went on becoming feebler, and five hours after the accident the patient felt the extremities becoming cold, vomiting occurred

and a rather severe hemorrhage supervened from the bowels and bladder. It was impossible to arouse the powers of the patient, and he succumbed in two hours. Death in such cases, says Dr. Fridet, of Clermont-Ferraud, is rare. Generally, swelling, lividity, and brown stains appear on the wounded limb, and are accompanied by loss of strength, nausea, and coldness of the extremities. In general, he says, these alarming symptoms leave in a few days, and the patient is restored to health. M. Delasiauve has noted, in one case, extreme retardation of the pulse to twenty-eight pulsations, and swelling of the tongue. M. Fridet thinks that the accidents are in proportion to the quantity of venom, and some experiments made in Beaujon hospital confirm this method of viewing the matter.

The non-coagulability of the fibrine from the fluid nature of the blood, explains the petechial stains and hemorrhages which are seen in men and also in animals when experimented on. We ought at once to cauterize rapidly with volatile alkali when the bite takes place, or use a red-hot iron. In one case Dr. Delasiauve placed setons, in order to see the bite well and cauterize energetically.—*The Doctor.*

ABSINTHE.

The *liqueur*, *extract*, or *cream* of absinthe can be made from all the varieties of absinthe officinale, but those known as *absinthe romaine*, *little absinthe*, *absinthe pontique*, and above all *absinthe Suisse*, are preferred; the last is the most bitter and aromatic. The best liqueur is manufactured in the little town of Couvet, in Switzerland, and at Pontarlier, in France. The proportion of alcohol in this liqueur is considerable, since it marks 27° at least on the alcoholometer; its savor is strong, very aromatic, but not at all bitter. Workmen drink *absinthe verte*, or *absinthe blanche*, liqueurs of inferior quality, much less alcoholic, and much less mischievous. Absinthe is adulterated with angelica, spinach leaves, nettles, and sulphate of copper occasionally. It has only been in use as a liqueur for the last thirty years. The extract of absinthe, a common apothecary's drug, was extensively used in Africa against dysentery in the camps. The bibulous ne'er-do-wells of the African legions (*deux ans d'Afrique* is a severe military punishment) acquired a liking for the medicine, and an officer of Marshal Bugeaud's staff introduced it as a liqueur into Parisian *cafés*, making a great fortune by the innovation, it is said.—*Food Journal*, Jan. 1873.

ANTIDOTES FOR PHOSPHORUS.

G. H. Roessingle has been making experiments with copper and turpentine as antidotes for phosphorus, and arrives at the following conclusions:—

1. The assertions of Bamberger that oil of turpentine is not antidotal to phosphorus are not correct.

2. All the rabbits treated with the oil of turpentine lived longer than those in which a copper salt was used.

3. The dose of phosphorus which could be supported was far larger with the oil of turpentine than with the salt of copper.

4. The temperature never ran so high when the turpentine was used as when the copper was.

5. During period of the high temperature the animals lost weight more rapidly when copper was used than when turpentine was employed. From these conclusions, based on numerous experiments, Roessingle decides in favor of oil of turpentine as the best known antidote for phosphorus.

Mahaux details (*Presse Med.*, No. 12, 1872) two cases of phosphorus poisoning treated with oil of turpentine successfully; in one the dose of phosphorus is said to have been large. Prof. Crocy, of Brussels, (*ibid.*), reports a case treated with large amounts of lime-water without success. Vito Giuseppe de Marco also reports (*Il Morgazin*, xiv. 3-4, p. 217, 1872) a case which recovered under the use of turpentine.—*Schmidt's Jahrbücher*, Dec. 16, 1872.

AMMONIA IN SNAKE-BITE.

On the morning of Aug. 6th, 1872, Wm. R., Jr., colored, in getting out of his bed, which he occupied in common with his father and *their* wife, in their little hut at the foot of the mountain, was bitten by a snake—a rattlesnake or copperhead—was not certain which. Dr. Thos. A. Elder, who saw him first about 5 P. M., after he had previously taken about a half-pint of whiskey without perceptible effect, says:—

His hand and arm were swollen to such a degree that one would suppose the skin must burst; the skin seemed thick and hard like heavy leather; the pulse was small, weak, rapid, about 130, and very irregular; the breathing labored; the arm very painful; he was weak and faint. I injected with the hypodermic syringe, ℥xv. of a solution composed of equal parts of aq. ammon. and aquæ puræ, into the neighborhood of the bite, and ℥x. into the well arm. Within twenty min-

utes it showed its effect. He could feel it going all through him, especially at the point of injection. The pulse came down to about 80, doubled in strength, and became regular. Within an hour, the pulse growing somewhat more rapid, and weaker, I injected ℥x. more into the well arm, and at the same time, the same quantity into the affected arm. I ordered him spts. ammon. arom., dr. j, in water every third hour. He then started on his homeward journey, and succeeded in going a mile, when he had to lie by for the night, being too weak to go farther. The next morning I saw him at the house in which he had spent the night. I found him in very much the same condition in which he was when he came to me the day before. The arm had become painful again, the pulse rapid and weak. I injected him again twice, in all about ℥xx. of the above solution, and with the same result.—*Chicago Medical Journal*, Dec., 1872.

AMMONIA IN SUSPENDED ANIMATION.

The value of the injection of ammonia, as recommended by Professor Halford, in cases of snake-bite and suspended animation, has been again demonstrated. A lady in Melbourne recently swallowed by accident an ounce of Browne's chlorodyne, which is a mixture of chloroform, morphia and prussic acid. When seen by her medical attendant, she was, as he imagined, on the point of death, cold, insensible to everything, and giving only occasional gasps as signs of breathing. Recollecting a former case, in which a young man who had taken chloroform was revived after death had apparently occurred, the doctor mixed half a drachm of the liq. ammon. fort. with one and a half of water, and within the space of one minute injected the whole into a vein of the arm. In a few minutes the pulse returned, the breathing became natural, and in twenty minutes the whole body had regained its natural warmth; but perfect consciousness did not return for some hours afterwards. The patient made a rapid recovery. Two further instances have been reported in which the timely use of the injection saved the victims of snake-bites from the death which threatened them. —*Melbourne Argus.*

Formation of Corrosive Sublimate in Powders containing Calomel.—G. Vulpius has been examining this subject, and finds that when calomel is mixed in powder with white sugar, or calcined magnesia, or hydrated carbonate of magnesia, or bicarbonate of soda, corrosive sublimate is formed in twenty-four hours. Rather large quantities are formed in powders composed of calomel, white sugar, and

bicarbonate of soda. None is formed when a powder consisting of calomel and bicarbonate of soda is digested with water containing hydrochloric acid. Pepsin does not favor the formation of corrosive sublimate.—*Chemical News*, Nov. 1, 1872.

Lead Poisoning in a Child Eight Days Old.—Doctor Bouchut was called to see the infant, which was healthy in appearance, but suffered day and night with a frightful colic, and finally died. After its death, it was discovered that the mother was using for her cracked nipples a quack salve, which contains very largely of acetate of lead.

Tests for Ammonia.—R. Böttger says that by the chloride of mercury in solution the $\frac{1}{200000}$ part of ammonia or its base can be recognized, and that by it ordinary illuminating gas can be shown to contain ammonia.—*Zeitschrift des Oester. Apothek. Vereins*, Jan. 20, 1873.

A NEW TEST FOR ARSENIC.

Bettendorff has simplified Hager's method of testing for this substance, and, it would seem, has rendered it peculiarly suitable for testing pharmaceutical preparations for slight impurities from this element.

The method of testing commercial sulphuric acid for traces of arsenic will give a fair illustration of the author's process.

A small quantity of protochloride of tin, in a shallow dish, is covered with pure hydrochloric acid (1.12 sp. gr.) until it is dissolved. To this is added, drop by drop, the sulphuric acid to be tested, the vessel being agitated at each addition. This addition will cause considerable heating, and if no arsenic is present the liquid will remain clear. If the arsenic is present in the smallest quantities, the liquid will be colored first yellow, then brown, and finally a dark grayish-brown, becoming at the same time turbid.

The process, while far more readily carried out than Marsh's, is declared to be nearly equal to it in delicacy.—*Journal Franklin Institute.*

Trichinæ.—The Prussian Government publicly calls attention to the presence of trichinæ in hams imported viâ Bremen from the United States, warning purchasers to abstain from them, and threatening the sellers with criminal proceedings.—*Med. and Surg. Reporter.*

LACERATIONS PRODUCED BY A LION; DEATH IN 48 HOURS FROM TRAUMATIC GANGRENE.

Dr. John Ashhurst, Jr., reported the following case: J. W., aged 25, a professional lion-tamer, engaged with a menagerie now exhibiting in the outskirts of the city, was rehearsing his part on the afternoon of Tuesday, April 2, 1872, and had placed his head in the lion's mouth, when the animal unexpectedly closed his jaws; the by-standers rushed to the rescue, and with clubs and iron bars forced the wild beast to loose his hold, when, had his victim made his escape, he would have got off with moderately severe lacerations of the face; unhappily, however, either falling in the cage, or, as other accounts have represented, voluntarily returning with a mad determination to obtain the mastery, the unfortunate man again came within the lion's grasp, was quickly struck down, and the monster's jaws again closed, this time upon the fleshy part of the victim's right thigh. Again the wild beast was driven off, and his conquered conqueror was dragged from the cage, bleeding profusely, and seeming more dead than alive. This was about four o'clock in the afternoon, and the wounded man was taken to a neighboring tavern, from which he was brought, a little before midnight, to the Episcopal Hospital. When admitted, the patient was in a state of profound shock; there were several lacerations about the lower part of the face and chin, the largest wound having laid open the right cheek into the mouth, while on either side of the right thigh were numerous irregular and jagged openings, varying in length from a few lines to two inches, or even more; these wounds appeared to be of great depth, the muscles of the limb having been evidently torn up and mangled in a frightful manner, though the bone, and, as far as could be ascertained, the femoral artery, seemed to have escaped injury.

I did not see the patient until about 2 P.M., April 3, when I found him in a manifestly hopeless condition. His pulse was extremely feeble and running at the rate of 172 beats to the minute, his respirations being about 40 in the minute, while his injured thigh was enormously swollen, emphysematous and crackling from the gaseous products of decomposition, and discharging profusely from its various wounds a bloody, sanious, and very offensive fluid; it was, in fact, in that condition known to surgical writers as true "traumatic or spreading gangrene." This condition had come on during the night (as I am

informed by Dr. Simes, the house-surgeon), and therefore in less than eighteen hours from the time of the patient's injury.

I saw the patient again the next day, when he was evidently moribund; there was no pulse at the right wrist, and that on the left was barely perceptible; the right leg, below the knee, was now white, cold, and corpse-like, while the thigh was swollen almost to bursting, black in parts, with the muscles protruding through the wounds, and exhaling a most offensive smell; the discoloration of impending gangrene had already reached the buttock. While thus fully a quarter of the patient's body was literally dead and decomposing, his consciousness was perfect, and his mind clear when he was spoken to, though he occasionally wandered off in delirium when left to himself. He complained of almost no pain, only a little, he said, about the feet. He died two hours afterwards, just forty-eight hours from the time of his injury. No autopsy could be obtained.—*Transactions of the Philadelphia College of Physicians*, Vol. IV., No. 9.

Death from the Inhalation of Ether.—The patient, aged 20, feeble from chronic spinal disease, was anæsthetized for the performance of tenotomy. Dr. D. W. Hand, who reports the case (*Northwestern Medical Journal*, March, 1873), says: "The best sulphuric ether, made by Powers & Weightman, was used, and administered by myself, in the presence of Drs. J. H. Stewart, C. E. Smith, and H. C. Hand, and Messrs. Horst and Davenport, medical students. A towel was folded into a cone, and this covered by a newspaper, the ether being poured into the cone, about two drachms to a half an ounce at a time, and then held lightly over the nose and mouth. The inhalation began at 3.15 P.M., and in about twenty minutes he came quietly under the influence of the anæsthetic without anything unusual being noticed, except that the pulse was rapid, from 120 to 140."

After describing the operation, Dr. Hand continues as follows: "While Dr. H. was about finishing the operation by cutting the pectinei, the patient vomited freely, and immediately thereafter became very pale, with weak pulse and copious perspiration. It should here be noted that the blood which escaped from the first punctures made was bright red, and to every appearance natural, while that from the two last punctures, those made to cut the pectinei, was dark, almost black, not turning red on exposure, and resembled very closely that found at the autopsy. Some whiskey was called for, but before it could be administered the teeth were clenched, the eyes rolled up, with the pupils widely dilated, and respiration suddenly ceased. Artificial respiration was at once resorted to, and kept up steadily for about thirty minutes; after three or four convulsive movements of the

chest there was no sign of life. Aqua ammonia was fruitlessly applied to the nostrils and injected (diluted 1 to 6) into the external jugular vein. It was found that respiration ceased at 4 o'clock, so that the patient was under the influence of the ether just three-fourths of an hour. The amount given was about four and a half ounces.

At the autopsy the heart was found normal in all respects.

PRESCRIPTIONS AND FORMULAS.

Hypodermic Medication.

Much of the success of this method of medication depends upon the purity of the medicines used, and the character of the solutions. The remedy should be in a perfect state of solution, and always filtered to remove any undissolved portions, as such are apt to give rise to the formation of small abscesses. The solution should not be too strongly acid or alkaline, and not too much concentrated. Pure distilled water only should be used as a solvent, when practicable, and the solution should not be kept too long. We give below some of the formulæ in common use.

For Morphine, Magendie's solution is the best. It consists of Morphiæ sulph. grs. xvj; Aquæ dest. ʒ j. Mix and filter. The dose is from 5 to 8 minims.

For Atropine; ℞. Atropiæ sulph. gr. ss.; Aquæ dest. ʒ iij. Mix and filter. The average dose is 4 minims. If it is desired to combine these two remedies, one grain of atropine may be added to the ounce of Magendie's solution; of this, five minims is the average dose.

For Strychnine; ℞. Strychniæ sulph. gr. j; Aquæ dest. ʒ iij; Acidi hydrochlori., gt. j. Mix and filter. Average dose five minims. It would be well to begin with a small dose and gradually increase.

For Quinine; ℞. Quiniæ sulph. grs. xx; Acidi sulph. dil., ten minims; Aquæ dest. ʒ iij. Mix and filter. Nine minims equal one grain. This solution is more apt to cause abscess than the above, on account of its greater acidity.

For Calabar Bean; ℞ Ext. calabar bean grs. ij.; Aquæ dest. ʒ j. Mix and filter. The average dose of this is eight minims.

For Corrosive Sublimate; ℞. Hydrarg. Bichlor. gr. j.; Aquæ dest. ʒ ij. Mix. Dose about ten minims, and may be used every alternate day. It has been highly spoken of in the treatment of constitutional syphilis.—*Canada Lancet.*

An Ointment for Neuralgia.

Dr. J. Knox Hodge recommends the following as an application which will relieve facial or any other neuralgia almost instantaneously:—

Take of Albumen of Egg.... oz. j.
Rhigolene..... dr. iv.
Oil of Peppermint... dr. ij.
Collodion,
Chloroform..... ää dr. j.

M.

Agitate occasionally for 24 hours, and by gelatinization a beautiful semi-solidified, opodeldoc-looking compound results, which will retain its consistency and hold the ingredients intimately blended for months.

Apply by smart friction with the hand, or gently with a soft brush or mop along the course of the nerve involved.—*Georgia Companion.—The Clinic*, Sept. 28, 1872.

Fluid Extract of Senega.

H. N. Rittenhouse, of Philadelphia, proposes the following as an improved process of making the fluid extract of Senega. He says:—In my hands the following has given a very satisfactory fluid extract, a sample of which, although exposed to all the changes of tempe-

rature of the past six months, has shown no tendency at all to gelatinize, and has only deposited a very slight sediment:—

Take of—

Senega in coarse powder	7,680 grains.
Bicarb. soda	153 "
Alcohol, one part Water, three parts	32 oz., or q. s.

Mix thirty-two ounces of the alcohol and water, and dissolve the soda in it, moisten thoroughly the senega with this and let it macerate in a covered vessel twenty-four hours, transfer the mass to a percolator and displace twelve ounces, set this aside and continue the percolation with alcohol and water in the above proportions until the drug is exhausted; evaporate or distil this last portion until reduced to three fluid ounces, add one ounce of alcohol to this, and mix it with the reserved twelve ounces. Shake well this extract for a day or two at frequent intervals, and then decant or filter.

Colorless Tincture of Iodine.

J. R. McCullough proposes the following as an improved formula:—

Take of Tinct. iodine	one ounce.
Glycerine pure	one ounce.
Sulphite of soda	one drachm.

Rub the salt to a powder in a small mortar, and add the glycerine gradually; then pour in the tinct. iodine and triturate gently until a solution is effected, and the mixture assumes an amber color. The properties of iodine are increased by the aid of the salt, and the vehicle of glycerine employed certainly enhances its value, and convenience for application locally to scorbutic and other similar ulcers.—*Pharmacist.*

Elixir of Bismuth.

Oxide of bismuth	℥ ix.
Citric acid	℥ xvi.
Strong solution of ammonia	fl ℥ xij, or q. s.
Water	q. s.

To provide the oxide of bismuth, a pound of the subnitrate of commerce is boiled for five minutes in four pints of liquor potassæ, which must be free from carbonate. The oxide is easily washed by decantation, and must be dried at a moderate heat. It forms a dull lemon-yellow powder, having the formulæ Bi_2O_3 ($Bi\,O_3$).

To prepare the solution, dissolve first eight ounces of the citric acid in four fluid ounces of water, and carefully neutralize with solution of ammonia (about seven fluid ounces) mixed with half its volume of water. Then add the remainder of the citric acid, and when it has dissolved introduce the oxide of bismuth. Heat the mixture to near its boiling-point for fifteen minutes, with frequent stirring; then add a pint of water and sufficient ammonia to dissolve the citrate of bismuth, and render the liquid slightly alkaline. Finally make up the measure of one gallon, and filter through paper.—*London Pharmaceutical Journal.*

Brown-Séquard's Neuralgic Pill.

℞. Extract belladon	gr. 1-6
" stramon	gr. 1-5
" cannab. ind	gr. 1-4
" aconit	gr. 1-3
" opii	gr. 1-2
" hyoscyam	gr. 2-3
" conii	gr. 1
Pulv. glyc	gr. q. s.

For one pill.—*The Medical and Surgical Reporter.*

Lacto-Phosphate of Lime.

The following formula is commended in *The Chemist and Druggist* for August, 1872:—

℞. Concentrated lactic acid	1 fl. oz.
Magma of freshly precipitated phosphate of lime, as much as will dissolve.	
Orange-flower water	1½ oz.
Water up to	8 "
White sugar	11 ozs.

Mix the lactic acid with two ounces of water, and saturate it with the magma. Put the liquid upon a filter and add the rest of the water until eight fluid ounces of filtrate are obtained. Pour this upon the sugar contained in a bottle; shake occasionally, until solution is effected, and strain. No heat ought to be applied, else the syrup assumes a milky appearance. The syrup thus prepared contains between two and three grains of dry phosphate of lime in each fluid drachm, besides the lactic acid.

Purgative Mixture of Vienna.

Take of	Manna.....	66 grms.
	Senna.....	10 "
	Cream of tartar.....	4 "
	Coriander, raisins, āā.....	2 "
	Water.....	320 "

Boil until the water is reduced to 190 grammes.

Take before breakfast.—*Journal de Pharm. et de Chimie*, October, 1872.

Various Formulæ.

The following formulæ are taken from the collection recently published for use in the Philadelphia Hospital.

In their preparation cheapness was especially kept in view.

Confectio Guaiaci Composita.

℞. Guaiaci pulv. gr. xxx.
Pulv. rhei ʒ j.
Sulphuris ℥ j.
Potassæ bitartratis ʒ ss.
Zingiberis gr. xxx.
Syrupi q. s.
Ft. confect.
Dose—Two to four drachms.
Phil. Hosp. Ph.

Linimentum Saponis Viridis.

℞. Saponis viridis ℥ j.
Alcoholis q. s.
M. Dissolve and filter.
Phil. Hosp. Ph.

Linimentum Terebinthinæ Compositum.

℞. Ol. terebinth. f ℥ j.
Tr. saponis camph. q. s. ad f ʒ vj.
Aquæ ammoniæ (f. f.) f ℥ j.
M.
Phil. Hosp. Ph.

Linimentum Chloroformi Compositum.

℞. Chloroformi f ʒ ij.
Tr. aconiti rad. f ʒ ss.
Aq. ammoniæ f ʒ ss.
Ol. olivæ f ʒ v.
M.
Phil. Hosp. Ph.

Mistura Arsenicalis.

℞. Liq. potass. arsenitis f ʒ j.
Ferri et ammoniæ tart. ʒ ss.
Aquæ f ℥ j.
Glycerinæ q. s. ad f ℥ iss.
Ol. cinnamomi gtt. vj.
Dose—Teaspoonful.
Phil. Hosp. Ph.

Mistura Arsenicalis Comp.

℞. Liq. arsenici chloridi f ʒ j.
Cinchon. sulph. ʒ ss.
Tr. ferri chlorid. f ʒ iij.
Strychniæ sulph. gr. ss.
Syrup. q. s. ad f ℥ iss.
Dose—Teaspoonful.
Phil. Hosp. Ph.

Mistura Cretæ Preparatæ Comp.

℞. Tr. catechu,
Tr. opii camph. āā f ʒ vj.
Acid. carbolic. gtt. xij.
Misturæ cretæ prep. q. s. ad f ʒ vj.
S. Dose—Tablespoonful.
Phil. Hosp. Ph.

Mistura Acidi Sulphurici Astringens.

℞. Acid. sulph. aromat. f ʒ ij.
Extr. hæmatoxyl. ʒ ij.
Tr. opii camph. f ℥ ss.
Syrup. zingiberis q. s. ad f ℥ vj.
M. S. Dose—Tablespoonful.
Very useful in serous and other non-inflammatory diarrhœas.—*Phil. Hosp. Ph.*

Mistura Ferri et Cinchon. Comp.

℞. Cinchoniæ sulph. ʒ j.
Strychniæ sulph. gr. j.
Ferri pyrophosphatis ʒ j.
Acid. tart. q. s.
Syrup. f ℥ ij.
Olei carui gtt. x.
Glycerinæ f ℥ ss.
M. S. Dose—Teaspoonful.
Phil. Hosp. Ph.

Mistura Amara.

℞. Extr. gentian. fld.,
Extr. quassiæ fld., āā f ʒ iij.
Tinct. zingiberis,
Aquæ q. s. ad f ℥ iij.
S. Dose—One to three teaspoonfuls.
Phil. Hosp. Ph.

Mistura Ferri Amara.

℞. Extr. gentian. fld.,
Extr. quassiæ, āā f ʒ iij.
Tinct. zingiberis f ʒ ii.
Ferri pyrophosph. ʒ ij.
Aquæ q. s. ad f ℥ iij.
M. Dose—Teaspoonful.
Phil. Hosp. Ph.

Mistura Chinoidine.

℞. Chinoidine,
Acidi acetici, āā ℥ j.
Misturæ aromaticæ, f ℥ xxix.
Digest in a half-gallon bottle for twenty-four hours, with frequent agitation until all the chinoidine is dissolved.
A teaspoonful contains two grains.
Phil. Hosp. Ph.

Mistura Ferri Pyrophos. cum Quinia.

℞. Ferri pyrophosphat. ʒ iv.
Quiniæ sulph. ʒ j.
Acid. phosphor. q. s.
Misturæ aromaticæ, ℥ xxx.
M. S. Dose.—A tablespoonful = 4 grs. of the pyrophosphate of iron, and 1 gr. of the sulphate of quinia.
Phil. Hosp. Ph.

Mistura Aromatica.

℞. Sem. coriand. drs. ʒ ij.
Sem. angelicæ drs. ʒ ijss.
Spts. vini deod. f ℥ xij.
Aquæ f ℥ x.
Glycerinæ f ℥ v.
Syrupi f ℥ vj.
Percolate 2 pints.
A pleasant vehicle for administering nauseous remedies.
Phil. Hosp. Ph.

Mistura Cosmetica.

(*Goddard's Cosmetic Lotion.*)

℞. Tr. benzoin. ʒ ij.
Hydrarg. bichlor. gr. vj.
Aquæ rosæ f ℥ vj.
M.
Phil. Hosp. Ph.

Mistura Sodæ Composita.

℞. Sodæ bicarbon. gr. xx.
Creasoti gtt. ij.
Acaciæ,
Sacchari alb., āā q. s.
Sp. lavandulæ comp. f ʒ ij.
Aquæ q. s. ad f ℥ j.
Ft. mist.
Dose—Half a fluid ounce two hours after meals.
Phil. Hosp. Ph.

Mistura Zollickofferi.

℞. Potas. iodid.,
Pulv. guaiac. res., āā ʒ iiss.
Vin. colchici rad. fl ℥ iss.
Syr. simp. et
Aquæ cinnamom. āā ad oj.
M. S. Dose—One tablespoonful.
Phil. Hosp. Ph.

Pilulæ Chinoidine et Arsenici.

℞. Chinoidine,
Ferri pulv., āā gr. xl.
Extr. nucis vomicæ gr. v.
Acid. arseniosi gr. j.
Ft. mas. in pil. xx. div.
Phil. Hosp. Ph.

Mistura Ferri Chloridi Composita.

(*Basham's Mixture.*)

℞. Liq. ammon. acet. ℥ iij.
Tr. ferri chlor. f ℥ iiss.
Acid. acet. dil. f ℥ j.
Alcohol. f ℥ ij.
Syrupi Aquæ, āā q. s. ad f ℥ vj.
M. S. Dose—Tablespoonful.

Phil. Hosp. Ph.

Pilulæ Colocynthæ c. Belladonna.

℞. Aloes,
Extr. colocynth. comp., āā gr. xviij.
Extr. belladonnæ gr. iss.
Ol. anisi gtt. xii.
Ft. mas. in pil. xij. div.

Phil. Hosp. Ph.

Pilulæ Podophylli Comp.

℞. Resinæ podophylli gr. ij.
Extr. colocynth. comp.,
Extr. hyoscyami, āā gr. xij.
Ft. mas. in pil. xij. div.

Phil. Hosp. Ph.

Pilula Rhei et Gentianæ.

℞. Pulv. rhei gr. ij.
Ext. gentianæ gr. j.
Ext. hyoscyami gr. j.
M. et ft. pil. no. j.

Phil. Hosp. Ph.

Pilula Aloës Composita.

℞. Ferri sulph. exsiccat. gr. j.
Pulv. aloës gr. ij.
Terebinthinæ alb. gr. j.
Ol. terebinth. q. s.
M. et ft. pil. no. j.

Phil. Hosp. Ph.

Pulv. Sodæ Compositus.

℞. Bismuth. subnitratis gr. v.
Sodæ bicarb.,
Zingiberis,
Calumbæ, āā gr. ijss.
M. et ft. chart. j.

Phil. Hosp. Ph.

Syrupus Guaiaci.

℞. Guaiac resin. ℥ j.
Liq. potass. f ℥ ss.
Aquæ q. s. ad f ℥ viij.
Adde
Sacch. albæ ℔j. et ft. syrup.
Sig. Dose—teaspoonful (containing 5 grs. of guaiac).

Phil. Hosp. Ph.

Tinctura Styptica.

(*Pancoast's Styptic.*)

℞. Potas carb. ʒ iij.
Saponis hisp. ʒ j.
Alcohol f ℥ ij.
M.

Phil. Hosp. Ph.

The Use of Bullock's Blood in Medicine.

BY WILLIAM C. BAKES.

My purpose in calling attention to this article is to state that, though the use of powdered blood may be a novelty in Europe, it is not a new thing in this country. In 1852, at the suggestion of the late Professor Samuel Jackson, M. D., Mr. Elias Durand, an eminent pharmaceutist of this city, carefully evaporated fresh bullock's blood to the consistence of an extract, which was reduced to powder, and prescribed by Dr. Jackson, under the title of pulv. sanguinis. The following is a copy of one of his prescriptions:—

R. Pulv. sanguinis,..... one drachm.
" aromat.,
" sacchari, āā,..half a drachm.
M. et divide in chart. No. xij.

Dr. Jackson prescribed this preparation in a large number of cases with satisfactory results, and I think I am correct in stating that the use of this remedy suggested to him the compound mixture of phosphates, afterwards considerably modified, and now popularly known under the name of chemical food.—*Am. Jour. of Pharmacy.* Vol. xliv. No. 10.

Aromatic Syrup of Phosphates of Iron and Quinia with Ignatia.

℞.	Ferri sulphatis pur.....	℥ xv
	Sodæ phosphatis.....	℥ iij
	Quiniæ sulph.....	℥ vi
	Acidi sulph. dil.....q.	s.
	Aq. ammoniæ.....q.	s.
	Tinct. ignat. amaræ sat.....	℥ iij
	Sacchari albi.....	℥ xx
	Acidi phosphorici glac.....	℥ xv
	Alcohol.....	℥ iv
	Tinct. aurant. essent.....	℥ j
	Ol. cardamomi sem.,	
	Ol. carui, āā.....	gtt xx.

Dissolve the sulphate of iron in three ounces, and the phosphate of soda in five ounces of boiling water. Mix the solution in a porcelain bottle with a tight-fitting stopper, and instantly insert the stopper so as to exclude both light and air. Set aside till the precipitate of phosphate of iron separates. Throw this on a fine linen filter and place in a porcelain funnel, and pour on water of the temperature of 180° F. till the washings cease to be affected by chloride of barium. Then rapidly fold up in the linen filter and subject to pressure in a press until quite dry, and dissolve in the distilled water by the aid of the glacial phosphoric acid. Dissolve the sulphate of quinia in six ounces of water with sufficient dilute sulphuric acid, and precipitate the quinia by the addition of aqua ammoniæ. Wash the precipitated quinia carefully with water, and dissolve in the solution with the iron. Mix the alcohol and saturated tincture of ignatia together. Rub the essential oils and the tincture of orange with the sugar, and, lastly, mix all the ingredients and dissolve without heat.

The saturated tincture of ignatia is made by percolating sixteen ounces of alcohol through twenty-four ounces of finely pulverized ignatia bean. This syrup differs somewhat from the syrup of phosphates of iron, quinia and strychnia, and, though less elegant in appearance, keeps much better.—*C. G. Polk, M. D., in American Journal of Pharmacy.*

Oleates.

BY ALFRED W. GERHARD, PHARMACIST TO GUY'S HOSPITAL.

By reason of the impurities in commercial oleic acid, I find that it cannot be made to unite with the salts used in the following preparations in equivalent proportions; it will, however, form solutions of 20 per cent., and this I have chosen as a suitable strength:—

Oleate of Lead (20 per cent.).

Prepared by heating together oxide of lead one part, oleic acid four parts, until dissolved; on cooling, it forms a semi-transparent tenacious mass somewhat thinner than lead plaster. This is not well adapted for direct application, but requires diluting, and as it mixes readily with ordinary fats and oils, I have adopted the following formula for its exhibition:—

Ointment of Oleate of Lead.

Take of—

Oleate of lead (20 per cent.)	2 parts.
Oil of almonds.....	1 part.
Prepared lard.....	1 "

Mix with a gentle heat.

On cooling, this forms an elegant ointment resembling that of spermaceti.

Oleate of Zinc (20 per cent.).

Prepared by heating together oxide of zinc one part, oleic acid four parts, until dissolved. During the process of solution some bubbling takes place with disengagement of watery vapor. It is transparent when melted; on cooling it has the appearance of lead plaster, is hard and friable, and requires to be diluted in the same manner as oleate of lead.

Ointment of Oleate of Zinc.

Take of—

Oleate of zinc (20 per cent.) 2 parts.
Oil of almonds..... 1 part.
Prepared lard..... 1 "

Mix with heat.

This forms an ointment of the ordinary consistence.

Whilst experimenting with the above, I thought that if atropia and aconitina were soluble in oleic acid, they might prove useful preparations. I find they are readily so at ordinary temperatures, whilst the sulphate of atropia is soluble on the application of heat.

I have prepared solutions of the above, which nearly correspond to the ointments of the British Pharmacopœia.

Solution of Oleate of Atropia.

Take of Atropia..... 2 grains.
Oleic acid.....98 grains.
Dissolve.

Solution of Oleate of Aconitina.

Take of Aconitina..... 2 grains.
Oleic acid.....98 grains.

On economical grounds there can be no objection to the introduction of the oleates, as large quantities of oleic acid can be obtained at a cheap rate, but the chief consideration is whether they possess any advantages as remedial agents beyond those of the same kind already in use. This is a question for the therapeutist, and must be left to the physician and surgeon to decide.

Internal Hemorrhoids Treated without Operation.

During the past year, Dr. Beekman has treated, at the New York Dispensary, eleven cases of internal hemorrhoids, all occurring in females, and all treated without operation. In every case, the only internal medication consisted in the employment of the following formula:—

℞. Pulv. sennæ,
Potass. bitartrat.,
Pulv. sulphuris.....āā 2 oz.
Pulv. zingiberis..... ½ oz.—M.

This preparation is designated in the Dispensary Pharmacopœia as *Pulvis Sennæ Compositus*. The dose, as employed by Beekman, was a teaspoonful of the powder, in molasses, every morning. The local treatment consisted in the use of the following ointment:—

℞. Ext. belladonnæ,
Plumbi acetatis.....āā 2 dr.
Acid. tannic..... ½ oz.
Ung. adipis..... q. s.
M. et fiat unguentum.

A small mass of the ointment to be introduced within the anus thrice daily, after a thorough ablution of the parts with cold water.

The duration of the treatment was quite various, bearing a direct ratio to the severity of the case, ranging from a week to about five weeks. As far as could be ascertained, recovery took place in every instance, and no case of relapse has thus far come to Dr. Beekman's notice. A few of these patients suffered from hemorrhage, but not to an excessive amount. Instead of the ointment above mentioned, Dr. Beekman uses, in private practice, suppositories made up of the same ingredients, with the exception that cocoa butter is substituted for the simple ointment—each suppository containing two grains each of the extract of belladonna and acetate of lead, with four grains of tannin.—*Medical Archives.*

Compound Liniment of Mustard.

Take of oil of mustard, 1 fluid drachm; ethereal extract of mezereon, 40 grains; camphor, 120 grains; castor oil, 5 fluid drachms; rectified spirit, 4 fluid ounces. Dissolve the extract of mezereon and camphor in the spirit and add the oil of mustard and castor oil.—*Druggists' Circular.*

Anodyne Colloid.

Dr. M. H. Lackersteen gives (*Brit. Med. Journ.*, Dec. 21, 1872) the following formula for a topical anodyne colloid which he has found useful in neuralgia, sciatica, lumbago, all muscular pains, etc. It relieves local pain for the time, and procures a good night's rest. ℞.—Hydride of amyl, ℥ j; aconitia, gr. j; veratria, gr. vj; ethereal collodion to ℥ ij. The amyl, by its rapid volatilization, often produces, almost instantaneously, the desired result; but, should the pain continue, the alkaloids can be brought into activity by applying a piece of moist spongio-piline over the collodion film. The amyl hydride is the only new ingredient; but I think the colloid is a clean and elegant preparation.

Juniper Tar Soap.

℞. Oil of juniper, 1 fl. ounce,
Soft soap, 1 fl. ounce,
Alcohol, 1 fl. ounce. Mix.
—[*Druggists' Circular.*

For Chilblains.

Oxide of zinc, two parts; tannic acid, one part; glycerine, ten parts; balsam of Peru, eight parts; camphor, four parts. M.—*Southern Medical Record.*

Cholagogue.

The following is advised as an excellent cholagogue to combat very obstinate hepatic troubles:

℞. Fld. ext. taraxaci: elixir cinchonæ, ferri, et strychniæ aa. M. Dose, two drachms three times daily before meals. —*Ibid.*

Chilblains.

The following is useful where the chilblains are broken. Take of finely powdered galls, 1 drachm; spermaceti ointment, 7 drachms. Mix well, and then add: glycerine (pure), 2 drachms, and rub the whole intimately together. Use it as an ordinary dressing.—*Druggists' Circular.*

Aromatic Syrup of the Citrate of Iron, Cinchona and Strychnia.

BY C. G. POLK, M.D.

I propose the following formula which very satisfactorily meets my requirements as a physician, but which may not be sufficiently elegant to fill the wishes of the pharmacist:—

℞. Liq. ferri citratis	℥ xiii.
Sulph. cinchoniæ	grs. c.
Sulph. quiniæ	grs. xcij.
Strychniæ	grs. iij.
Acidi citrici	℥ i.
Aquæ bull	℥ xii.
Sacch. alb	℥ xiv.
Tinct. aurant. (essent.)	℥ ss.

First dissolve the sulphates of quinia and cinchonia in four ounces of water by the aid of sulph. acid. dil., and precipitate with aqua ammoniæ, gradually added until no more of the alkaloids are thrown down. Dissolve the citric acid in the boiling water, and add to the solution the alkaloids—cinchonia and quinia, first carefully washed free from every impurity, and also the strychnia and the sugar, first thoroughly rubbed up with the essential tincture of orange, and lastly, the solution of citrate of iron, and shake continually until the sugar is all dissolved.

This forms an amber-colored syrup, measuring about twenty-four ounces and of rather a pleasant bitter taste, in which the aromatic of the orange very materially modifies the bitter properties of the cinchona alkaloids. The intention is, that one drachm shall contain two grains of citrate of iron, one of the cinchona alkaloids and one sixty-fourth of a grain of strychnia. As the solution of citrate of iron is officinal, it is presumed that every druggist understands the mode of manufacturing it.

Phosphorus Pills.

Dissolve one grain phosphorus in half a drachm of chloroform, and rub in a mortar with two scruples powdered liquorice root till all the chloroform has evaporated. Add half a drachm powdered soap and work into a mass with water and divide into 24 pills.—*Druggists' Circular.*

Cream of Bismuth.

Take of

Subnitrate of bismuth	4 parts.
Starch	8 "
Glycerine	12 "

Mix.

Prof. Thiry commends very highly the above mixture as a local application in ectropion. When an astringent effect is desired, 1 to 2 parts of acetate of lead may be added.—*Presse Médicale Belge.*

Iodine Injection for Menorrhagia.

Dr. Dupierris, of Havana, according to the editor of *Revue de Thérap. Médico-Chirur.* (Nov. 1), has used the following prescription with very good results as an injection in a number of cases of uterine hemorrhages. No evil results have ever followed: the editor has also used the formula with great advantage in several cases.

Take of

Tinct. of iodine	15 parts.
Iodide of potassium	0.50 "
Distilled water	30 "

Mix.

Zootrophic Powder.

Dr. Polli recommends the following powder in—

1. Infants suffering from dentition.
2. Infants suffering from osteomalacia, rachitis, scrofula or chlorosis.
3. Pregnant females, and those having a puerperal cachexia.
4. In fractures and caries of the bones.
5. In tuberculosis, especially when vomica exists.
6. In the anæmia following hemorrhage and in leucocythæmia.
7. In convalescence from protracted disorders.

He thinks it does good by acting as a sort of mineral food.

Take of

Tribasic phosphate of lime	10 parts.
Phosphate of soda	15 "
Carbonate of lime	10 "
Sulphate of magnesia	15 "
Chloride of sodium	10 "
Bicarbonate of potash	15 "
Oxide of iron	10 "
Oxide of manganese	2.50 "
Silicate of potash	2.50 "

Make into a powder.

The dose for an adult is 75 grains a day, for an infant 30 grains.

Revue de Thérapeut. Nov. 15, from *Medizinisch-chirurg., Rundschan.*

Richard's Revulsive Liniment.

Take of

Water of ammonia	10 parts.
Oil of turpentine	15 "
Oil of sweet almonds	15 "

Mix.

Three daily frictions lasting four or five minutes in obstinate sciatica; the limb to be enveloped in cotton wadding.

Stomatitis.

Dr. S. R. Knight has used the following for Stomatitis of infants with great success:—

Jenner's Formula.

* ℞. Sodæ Sulph. ℥ i.
Aquæ f ℥ j.

To be applied with a camel's-hair pencil.

In other cases of stomatitis.

Jenner's Formula.

† ℞. Boracis ℥ i.
Glycerinæ f ℥ j.

Apply with camel's-hair pencil.

* Highly spoken of by Jenner.
† Strongly recommended by Jenner.

Tincture of Iodine.

In order to avoid the difficulty of powdering, R. Rother proposes in the *Pharmacist* the following method of making tincture of iodine:—

Take of

Iodine,.....1 troy ounce.
Sodium chloride,.....½ troy ounce.
Strong alcohol,.....14 fluid ounces or sufficient.
Water,..... .2 fluid ounces.

Rub the iodine and sodium chloride together, and add four fluid ounces of strong alcohol, triturate the mixture a few moments, and pour the liquid into a small filter; with the residue again mix four fluid ounces of strong alcohol, and pour the liquid into the filter after the first portion has passed through; repeat this manipulation with four fluid ounces more of strong alcohol, rinsing all the sodium chloride into the filter, and pour on strong alcohol until the filtrate measures 14 fluid ounces; then remove the filter with the white residue of sodium chloride, add the water to the filtrate, and mix; or the filter can be dispensed with, the solution of iodine successively poured off the residue into a bottle until the whole solution measures 14 fluid ounces; the suspended particles of sodium chloride allowed to subside, the solution decanted, and finally mixed with the water.

Mucilage of Gum-Arabic.

According to R. Rother, the following formula affords a mucilage which will keep in the hottest weather:—

Take of

Gum-arabic, 12 troy ounces.
Glycerine, 8 fluid ounces.
Water, 16 fluid ounces.

Chicago Pharmacist.

Laxative.

Dr Page recommends the following preparation of the Prussian Pharmacopœia:—

℞.—Senna leaves,.....oz. vj.
Liquorice root,.....oz. vj.
Fennel seeds,.....oz. iij.
Sulphur,.....oz. iij.
Refined sugar,.....oz. xviij.

The usual dose is a small teaspoonful at bedtime, in water, with which it is easily mixable, forming an agreeable draught. Children readily take it, with the belief that it is a sweetmeat.—*London Practitioner.*

Ung. Hydrarg. Oxidi Rubri.

Mr. J. Kalish (*Am. Journ. Pharm.*) recommends the following formula as producing a permanent preparation:—

Ol. Ricini..... six drachms.
Cera alba..... two drachms.
Hydrarg. oxid. rubrum... one drachm.

The ointment is said to be of good consistency, and a sample six months old exhibited no signs of change. The preparation is, however, liable to objection on account of the disagreeable odor of the castor oil, and also from being more irritating from the presence of this substance. In regard to this the writer says:—"To obviate this I substituted olive oil for the castor oil, but not with satisfactory results. Still I am not able to state positively that olive oil, entirely free from rancidity, will deoxidize the mercury, as I have some doubts about the oil I used. I then tried sweet oil of almonds; with this I have an ointment, made ten weeks ago, which has as yet shown no signs of change. I had previously tried lard, purified by different methods, also adding a few drops liq. potassæ, as remarked in the U. S. Dispensatory; but in each case there was a reduction of the oxide."

Formulæ.

Soluble Sulphate of Quinia.

J. Donde of Yucatan proposes the following formulæ in the *Jour. of Pharmacy.*

Soubeiran and others, speaking about this preparation, say that the officinal

sulphate must be dissolved in water acidulated with sulphuric acid, the solution evaporated, etc.; but as the quantity of acid is not given, the success is not certain: an excess of acid prevents the crystallization of the salt, and a yellow, somewhat greenish and deliquescent mass is obtained. After having failed twice, I succeeded well with the following exact proportions:—

Quinia sulphate, basic..150 grm.
Rain water..... 2 litres.
Sulphuric acid, 668.... 22 grm.

The acid is mixed with the water in a porcelain capsule, the sulphate is then added, and the mixture occasionally agitated until dissolution has taken place, which requires about an hour, at a temperature of 29° C. After filtering, the evaporation is continued till the liquor is reduced to 600 grm.; 24 hours afterwards the crystals are taken out, and the mother liquor remaining is evaporated a second time in order to obtain more crystals. The mother liquor finally remaining is used for precipitating the quinia.

Lemon Syrup.

Simple syrup..... 50 centilitres.
Lemon-juice purified. 45 grm.

The syrup is concentrated to 33° by boiling, and when it is cool the lemon-juice, clarified by repose, is added to it. One ounce and a half of this syrup and eight ounces of water will make a very agreeable lemonade.

Resinous Syrup of Tolu—and Syrup of Tar.

M. Latour proposes the following formula as retaining the resin in Syrup of Tolu:—

Take of

Balsam of Peru,....	100 parts.
Sugar,.....	300 "
Gum Senegal,.....	100 "
Water,.....	600 "
Syrup,.....	2400 "

Triturate the balsam carefully in a porcelain mortar with the powdered gum Senegal and the sugar, until an intimate finely pulverized mixture results. Heat this in a copper vessel to 100° C., and add a sufficient quantity of syrup, previously diluted with its proportion of water; triturate with care, continuing the heat, and when the tolu is sufficiently emulsified, mix the boiling syrup little by little.

A tablespoonful of this syrup contains 15 grains of the balsam.

Take of

Tar (previously washed with boiling water),	100 parts.
White sugar,.....	600 "
Gum Senegal (powder'd),	100 "
Water,.....	400 "
Syrup,.....	2000 "

Mix and triturate as in the previous process.

A tablespoonful contains 15 grains of the tar.

By mixing the syrup of tar and the syrup of tolu in equal quantities, a preparation is obtained which is better tolerated than the simple syrup of tar.—*L'Union Pharmaceutique*, Jan. 1873.

Syrup of Cinchona.

M. Saint-Plancat proposes the following:—

Take of

Calisaya bark,.....	100 grammes.
Alcohol at 50°.....	1 kilogr.
Sugar,.....	1 kilogr.
Water,.....	q. s.

Treat the bark with the alcohol by displacement, and afterwards by enough water to obtain 1000 grammes of liquid, which is to be received in a vessel containing the sugar, coarsely powdered, and set in a salt-water bath. Distil the syrup until all the alcohol is driven off.—*L'Union Pharmaceutique*, Jan. 1873.

GENERAL RECEIPTS.

Varnish to Prevent Rusting of Surgical Instruments.

The *Druggists' Circular* says: "There is a varnish which will protect surgical instruments from rust, but we do not recommend it for such a purpose, though it is very useful to protect steel under other circumstances. Here it is: Melt common rosin with a little Gallipoli oil and spirits of turpentine in proportions adapted to the particular case. The varnish should adhere firmly, not chip, and yet be easily removed. We have recently seen a mixture of carbolic acid and olive oil recommended in an English paper; but paraffine dissolved in benzine is said to be still better. We do not think that the simple mercurial ointment can be much improved upon for delicate instruments."

Origin of Guano.

In the last number of NEW REMEDIES, was published a statement from a German journal, that Habel had discovered guano to be formed from protozoa. Prof. A. M. Edwards writes us that he was the first to discover the fact, and refers to the Proceedings of the New York Lyceum, May, 1871, for a discussion of the whole subject.

Soldering Iron and Steel.

Dr. Sieburger publishes the following methods for soldering iron and steel:—

For objects of moderate size, hard brass solder is made by fusing together 8 parts of brass and 1 part tin. Soft brass solder is composed of 6 parts brass, 1 part zinc, and 1 part tin.

For soldering small iron or steel articles, a hard silver solder composed of equal parts of fine silver and malleable brass is used, the mass being protected by borax. Soft silver solder differs from this only in the addition of $\frac{1}{16}$ part tin.

Very fine and delicate articles are soldered either with pure gold or a gold solder composed of 1 part gold, 2 parts silver, 3 parts copper.—*Scientific American.*

To Remove Rust from Iron.

Simmer the pieces in kerosene oil for a number of days. This will so soften and loosen the oxide of iron that it can be easily rubbed off.—*American Artisan.*

Culinary Essences.

BY ALBERT E. EBERT.

Flavor of Almond.

Take of oil of bitter almonds, one fluid drachm.
Alcohol, 95%, ten fluid ounces.
Water, six fluid ounces.

Dissolve the oil in the alcohol and add the water, and filter.

This flavor should not be sold without a caution as to its poisonous nature, and directions as to the quantity to be used.

Flavor of Caraway.

Take of Caraway seed, bruised, one troy ounce.
Oil of caraway seed, two fluid drachms.
Diluted alcohol, sixteen fluid ounces.

Digest for 8 or 10 days, and filter.

Flavor of Celery.

Take of Celery seed, bruised, four troy ounces.
Diluted alcohol, sixteen fluid ounces.
Digest for 8 or 10 days, and filter.

Flavor of Cinnamon.

Take of Ceylon cinnamon, bruised, two troy ounces.
Oil of cinnamon, half a fluid drachm.
Diluted alcohol, sixteen fluid ounces.
Digest for 14 days, and filter.

Flavor of Cloves.

Take of Cloves, bruised, one troy ounce.
Oil of cloves, two fluid drachms.
Diluted alcohol, sixteen fluid ounces.
Digest for 8 or 10 days, and filter.

Flavor of Ginger.

Take of Ginger root, bruised, two troy ounces.
Wild ginger (asarum), bruised, one drachm.
Lemon peel, bruised, one troy ounce.
Diluted alcohol, sixteen fluid ounces.
Macerate for 14 days, and filter.

Flavor of Lemon.

Take of Lemon peel (fresh), cut thin, two troy ounces.
Oil of Lemon (fresh), one fluid ounce.
Alcohol, 95%, twelve fluid ounces.
Water, four fluid ounces.
Digest for 8 or 10 days, and filter.

Flavor of Nutmegs.

Take of Nutmegs (grated), one troy ounce.
Oil of nutmegs, two fluid drachms.
Diluted alcohol, sixteen fluid ounces.
Digest for 8 or 10 days, and filter.

Flavor of Orange.

Take of Orange peel (fresh), cut thin, two troy ounces.
Oil of orange (fresh), half a fluid ounce.
Alcohol, 95%, twelve fluid ounces.
Water, four fluid ounces.
Digest for 8 or 10 days, and filter.

Flavor of Rose.

Take of Red rose leaves in coarse powder, half a troy ounce.
Oil of rose, pure, five drops.
Alcohol, 95%, six fluid ounces.
Water, ten fluid ounces.

Dissolve the oil in the alcohol, mix with the water and macerate the rose leaves for 8 or 10 days in the menstruum, and filter.

Flavor of Tonqua Bean.

Take of Tonqua bean, bruised, four troy ounces.
Orris root, in powder, half a troy ounce.
Diluted alcohol, sixteen fluid ounces.
Digest for 14 days, and filter.

Flavor of Vanilla.

Take of Vanilla bean, cut very small, two troy ounces.
Diluted alcohol, sixteen fluid ounces.
Digest for 3 or 4 weeks, and filter.

Flavors of banana, pineapple, raspberry, and strawberry, termed fruit essences, are alcoholic solutions of the amyl and ethyl ether series.

Flavor of Pineapple.

Take of Essence of pineapple (artificial), six fluid drachms.
Diluted alcohol, fourteen fluid ounces.
Simple Syrup, one fluid ounce.
Tincture of Cinnamon, two fluid drachms.
Mix.

Flavor of Raspberry.

Take of Essence of Raspberry (artificial), one fluid ounce.
Diluted alcohol, twelve fluid ounces.
Syrup of raspberry (fruit), two fluid ounces.
Tincture of orris root (four ounces to the pint),
Tincture of cochineal, of each half a fluid ounce.

Mix.

Flavor of Strawberry.

Take of Essence of Strawberry (artificial), one fluid ounce.
Diluted alcohol, thirteen fluid ounces.
Syrup of raspberry (fruit),
Syrup of pineapple (fruit), of each six fluid drachms.
Tincture of cochineal, half a fluid ounce.

Mix. —*Pharmacist.*

Muller's Fluid for Hardening Tissues.

℞. Potassæ bichromat....gr. lxxv.
Sodæ sulphat.....gr. xxv.
Aquæ.....f ℥ vi.

M.

How to Make Sachets or Scent-Bags.

Various powders, etc., placed in silk bags or ornamental envelopes, are agreeable to smell of, and also economical for imparting a pleasing odor to linen and clothes as they are packed away in drawers, for they prevent moths.

For heliotrope powder, take half a pound of orris-root, one quarter pound of ground rose leaves, two ounces powdered tonquin bean, one ounce vanilla bean, one-half drachm grain musk, two drops otto of roses; mix it all by sifting through a coarse sieve. This is one of the best sachets ever made, and perfumes table-cloths, sheets, pillow-cases and towels deliciously.

For lavender powder, take one pound of powdered lavender, one-quarter pound of gum benzoin, and one-quarter of an ounce of otto of lavender.

For patchouli, use one-half a pound of patchouli ground fine, and a very little of otto patchouli. This herb is often sold in its natural state as imported, and is tied up in half-pound bundles.

Sandal-wood sachet powder is good, and consists of the wood ground fine. Cedar wood, when ground, forms a body for other sachet powders, and will keep moths at a distance. Dried fennel, when ground, is also used for scent-bags, and ground nutmeg is liked for this purpose. —*Exchange.*

To take Bruises out of Furniture.

Wet the part with warm water; double a piece of brown paper five or six times, soak it in warm water, and lay it on the place; apply on that a warm, but not hot, flat-iron till the water is evaporated. If the bruise be not gone, repeat the process. After two or three applications, the dent or bruise will be raised to the surface. If the bruise be small, merely soak it with warm water, and hold a red hot iron near the surface, keeping the surface continually wet—the bruise will soon disappear.—*Druggists' Circular.*

To Keep Glue from Souring.

If a little muriatic acid be put into glue when it is dissolved, ready for use, it will retain the glue in the same condition for a long time. It will neither dry up nor ferment. The use of a small portion of sugar of lead will also prevent fermentation.—*Druggists' Circular.*

NEW REMEDIES.

THERAPEUTICS.

A NEW MODE OF TREATING FUNCTIONAL DYSPEPSIA, ANÆMIA, AND CHLOROSIS.

BY C. E. BROWN-SÉQUARD, M.D.

In 1851 I had to treat a very bad case of dyspepsia, and succeeded in curing the patient by a plan of treatment which, I think, deserves attention. Since that time I have employed it with complete or partial success in a number of cases of dyspepsia, of chlorosis, of anæmia, and also as a means of ameliorating or curing nervous affections caused by gastric disturbances or poverty of blood. I could not say, as I have not kept notes of all the cases, how many times it has succeeded or failed. In a number of instances where failure occurred, I have found that the patients had not carefully followed the rules, and that the failure was, at least in a good measure, due to this lack of care. In two cases only some increase of flatulency and acid eructation took place for three or four days, when the plan was given up. In a case of dropsy, attended with anæmia, dyspeptic pains were increased for a week, when the plan was abandoned. These are the only instances I remember in which some bad effect was produced by this plan, and this aggravation soon ceased.

The first patient I submitted to this plan was a scientific man, 34 years old, of strong constitution, but from several causes reduced to a lamentable state of health. For about eight years he had been working very hard, taking no exercise, and living almost all the time in a vitiated atmosphere. He slept very little, and usually passed 18

or even 19 hours a day writing, reading, or experimenting. His diet was miserable, and, with the object of avoiding the need of much food, he took a great deal of coffee. He gradually, though slowly, became exceedingly weak. His digestion, which had been very good all his life before he began to work so much, had gradually become very bad. He suffered greatly from pyrosis, and a feeling of great distress, and gastric distention after each meal. Acid eructations and gas were frequently thrown up into his mouth, and when he did not vomit he found that his food remained on his stomach so long, that in the morning he frequently rejected things eaten the previous day. At last he had to give up work and stay in bed. But no improvement occurred from the rest he then had, or from various modes of treatment. His emaciation and weakness and dyspeptic symptoms increased, and his friends decided to have him removed to the country. But he was so weak that he had to be carried in a litter to the railway station. After a few days, finding that he had not improved, I decided to try a radical change of his alimentation, as regards the quantity of food to be taken at a time. Instead of *three* meals a day I made him take *sixty* or more. Every twelve or fifteen minutes he took two or three mouthfuls of solid food, chiefly meat and bread. He drank a little less than a wine-glass of Bordeaux wine and water every thirty or forty minutes. On the very first day this mode of alimentation was begun, his digestive troubles disappeared, and within a week he was so well that he returned to Paris, not, however, to go to work again, as he had been rendered wiser, but to prepare to go to the sea-shore. He continued the same mode of alimentation for about three weeks, and then gradually diminished the number of his homœopathic meals, and increased the amount taken at each of them, until in about 8 or 10 days he came to eat only three times a day, and a full meal at each time. His strength during the first week had become almost as great as it ever had been previous to his illness. Since that time his life has been one of great hardship, which he has borne remarkably well, and dyspepsia has only troubled him in a slight degree, rarely and for short periods.

The plan, as stated in the above case, consists in giving but very little of solid or fluid food or any kind of drink at a time, and to give these things at regular intervals of from ten to twenty or thirty minutes. All sorts of food may be taken in this way, but during the short period when such a trial is made, it is obvious that the fancies of patients are to be laid aside, and that nourishing food, such as roasted or broiled meat, and especially beef and mutton, eggs, well-baked bread, and milk, with butter and cheese, and a very moderate quantity of vegetables and fruit, ought to constitute the dietary of the patients we try

to relieve. This plan should be pursued two or three weeks, after which the patient should gradually return to the ordinary system of eating three times a day.

It is hardly possible to give more detailed rules as regards this hygienic mode of treatment. On the one hand, I have found few persons willing or able to follow it fully. On the other hand, many patients, especially those who have no dyspepsia, do not need to take so minute an amount of food at a time. Besides, it is certain that the quantity of food required varies notably in different persons. Prof. John C. Dalton states that the entire amount of food needed by a man in full health and taking free exercise is: of meat, 16 oz. av.; bread, 19 oz.; fat, 3½ oz.; and of water, 52 fl. oz.; *i. e.*, about 2½ lbs. of solid food, and rather more than 3 pints of fluid. According to Dr. Edward Smith and other European hygienists, the amount of solid food and of water required each day is notably larger than that marked out by the able American physiologist I have named. My experience with the patients on whom I have tried the plan of feeding above mentioned, shows that the amount of solid food required by an adult is nearly always as follows: from 12 to 18 oz. of cooked meat, and from 18 to 24 oz. of bread. As regards the quantity of fluids I have allowed, it has always been notably less than the amount indicated by Dr. Dalton (3 pints), and by Dr. E. Smith (4½ to 5 pints).

I hardly need say that in carrying out the plan I propose, attention must be paid to three points: 1st, the liking and the disliking of certain things by the patient; 2d, the importance of variety in food; 3d, the digestibility of certain things compared with others, digestibility which varies immensely in different patients. When I found that there was no disgust for a meat and bread diet, I ordered that roasted beef or mutton, with bread, be the almost only kinds of solid food taken. But most patients were either soon disgusted with this diet, or refused even to try it. Having ascertained this, I allowed the selection by each patient of his own dietary, insisting, however, that the quantity of cooked meat should be at least 12 oz. a day. The most varied diet as regards the kinds of food can be followed, however, under this plan as well as when one has only two or three meals a day. The only absolutely essential points are that the amount of food taken every 10, 15, 20 or 30 minutes be very small (from two to four mouthfuls), and that the quantity of solid food in a day be from 32 to 40 ozs., or a little less when, instead of water, the patient drinks beef-tea or milk.

I will not enter into long explanations to show how a marked benefit or a cure can be obtained in functional dyspepsia, in anæmia, and other affections by this mode of alimentation. I will simply say that the facts I have observed agree with the view that we are naturally

organized, like most if not all animals, to eat very frequently, and not, as we do, two, three, or four times a day. It seems certain from the facts I have observed that functional dyspepsia, when once it has begun (never mind by what cause), is kept up and increased by distention of the walls of the stomach. This fact is already well known, and physicians generally recommend that the quantity of liquid taken be very small, and that the solid food be as nourishing as possible, so that its bulk may be reduced, with the view of avoiding great dilatation by the fluid and solid substances introduced in the gastric pouch. But although deriving some benefit from this diminution of distention, many patients continue to suffer who might be benefited or cured by the plan I propose.

It may be asked if there is no danger that distention of the stomach, by a full ordinary meal, after a patient has followed for two, three, or four weeks the plan I propose, would not be more difficult and a source of greater trouble than before that organ had been allowed to contract considerably during the time this plan has been pursued. Facts answer this question in a way that leaves no doubt. There has never been, in the cases I have attended, the least trace of an increased trouble due to that cause. Even those patients who have not derived benefit from my plan of alimentation, and among them two who had while following it more acidity and flatulency, have, at any rate, had no increased trouble after having given it up. It is probable that the good obtained from this plan in dyspeptic patients depends at first on the rest given to the irritated stomach, and subsequently on a great amelioration in the quality of the gastric juice.

In anæmia and chlorosis, not complicated with dyspepsia, the advantage of this plan lies in the rapidity of the formation of blood from the notably increased amount of food that the patient can digest.

I have made but very few trials—and incomplete ones—of this plan in cases of organic affections of the stomach. I cannot but think, however, that it deserves being tried in most of such cases.

Against the obstinate vomiting of pregnancy this plan has already been employed successfully by a number of physicians, and once by myself in a case in which many modes of medical treatment had failed. —*Archives of Scientific and Pract. Medicine.*

NATURE AND TREATMENT OF ERYSIPELAS.

Dr. Kaczorowski (*Berl. Klin. Woch.*) believes that this disease is dependent on the development of minute organisms in the body, and he bases his treatment chiefly on this fact. He says:—

Since the disinfecting properties of carbolic acid have become more thoroughly recognized, I have instituted a series of experiments, extending over the last two years, with regard to the action of this agent in cases of this disease, basing my anticipations of a favorable result upon my belief that erysipelas is an infectious disease, dependent upon the presence of micrococci, a belief justified by the concurrent testimony of the investigations of Von Recklinghausen, Waldeyer, Heuter, Klebs, and Orth. The results of these experiments have been, almost without an exception, extremely favorable.

Appreciating the deceptiveness, as a rule, of infallible remedies, and the consequent disappointment of the practical physician, I have refrained from the publication of my method of treatment so long as my observed cases were few in number. But the extended opportunities of investigation offered me in the hospitals during the last few months, both as to number of cases and severity of symptoms, have confirmed my beliefs, and warrant their introduction to the medical public. My colleague, Dr. Samter, who has charge of the female wards of the City Hospital, has adopted my method of treatment, and neither of us has thus far lost a single case of erysipelas, although many very advanced cases have been sent to us, completely exhausted, and with gangrenous destruction of the skin of entire arms and thighs.

The treatment aims, on the one hand, at preventing the development of the bacteria, and, on the other, at sustaining the activity of the heart by stimulation and digestible food.

To obtain the first result, those parts of the skin which are already affected by erysipelas are rubbed every three hours with a mixture of carbolic acid and oil of turpentine (1 : 10), but *very gently;* the skin in the neighborhood, however, more energetically. The whole district rubbed is then covered with a soft linen compress moistened with concentrated lead water (1 : 100), and finally the parts affected already by the disease are again covered, outside of this compress, by thicker linen cloths dipped in ice-water and slightly wrung out, or by a bladder of ice. The external enveloping compresses with ice-water are changed as often as they begin to grow warm. The head or a whole extremity may be thus covered with ice-water compresses; lesser affected surfaces may be covered by ice-bags, which require less frequent renewal.

Internally, the patient may take lemonade or a weak solution of chlorate of potassa, to alleviate the accompanying stomato-pharyngitis and prevent diphtheritic deposits, with every one or two hours a teaspoonful of strong wine, to support the action of the heart. In very rare cases, accompanied by excessive adynamia, a few doses of camphor were exhibited.

For the relief of pain and the limitation of the exudative process, a subcutaneous injection of morphia ($\frac{1}{12}$ to $\frac{1}{6}$ grain) is made morning and evening in the vicinity of the parts affected. Regular operations of the bowels are induced by cold-water clysters or castor-oil.

Objectively, we notice, on the places which have been rubbed, at first increased redness of the skin, which extends more and more, under the successive inunctions, over the previously healthy skin surrounding the erysipelatous patch, frequently producing vesication and loss of epidermis. In the course of twenty-four to forty-eight hours the exudative process is cut short, as is manifested by a somewhat abrupt fall in the temperature of the skin and frequency of the pulse. This is the signal to desist from the inunctions, though the lead-water compresses around and outside of the erysipelatous patch may be continued for one day more.

When this treatment has been pursued, we have never seen a relapse. If the erysipelatous process extends itself beyond the time stated, it is the fault of the attendant, and no such case has occurred in our experience since we impressed this fact upon our hospital nurse.

Finally, I must remark that the use of tar, as recommended by Prof. Heuter, is based upon these same principles. Where I have employed tar, the desired result has been less speedily obtained than by my own method, possibly because the tar, from its consistence, is less thoroughly taken up by the skin than the more fluid oil of turpentine, impregnated with carbolic acid. Tar is also less well adapted for use upon the scalp, especially in the case of ladies, than my solution, in which the oil of turpentine conceals almost entirely the smell of the carbolic acid. Above all, I hold that the use of tar alone, with the simultaneous employment of cold, is insufficient for the speediest possible cutting short of the process.

TREATMENT OF ECZEMA RUBRUM.

Dr. Louis A. Duhring, in a clinical lecture on this obstinate and annoying affection, gives the following practical directions for accomplishing a cure. He says:—

This affection is not usually self-curable, and if allowed to go on without proper treatment may last indefinitely, the area of disease extending, and the infiltration of the tissues becoming more and more marked. We often see eczema rubrum of the leg of twenty years' or even longer duration. Nevertheless, when taken properly in hand,

with an appropriate course of treatment instituted, and the directions of the physician faithfully carried out, the disease is one of the most curable of all skin affections, and when once cured is not likely to relapse.

Now as regards the treatment. You must remember that this case is one of chronic disease, and that the treatment which is highly appropriate here would not suit at all in an acute eczema of a few weeks' duration. I shall order for this man two to four ounces of sapo viridis and eight ounces of unguentum diachyli. The former is simply a potash soap, which is manufactured in Germany. The unguentum diachyli * is not so well known; you will find the formula for its preparation in the University of Pennsylvania Pharmacopœia and in Neumann's Hand-book of Skin Diseases.

The method of using these remedies is as follows:—

The affected limb is first rubbed smartly for some minutes with a flannel rag covered with the soap, the rubbing being so brisk as even to make the skin bleed a little. Then, the soap being thoroughly washed from the surface by warm water, and the limb dried by gentle patting—not rubbing—with a soft towel, the ointment is applied, spread quite thickly on strips of soft linen about three inches wide and sufficiently long to go entirely around the leg, thus covering the diseased portion completely.

The effect of the rubbing with soap is at first to cause quite a good deal of stinging and burning, and the leg for the time looks worse than it did before. The application of the ointment, however, soon soothes the part materially, and great comfort is experienced for the next ten or twelve hours. At the end of that time the itching has set in again, and it is time for a new application of the soap and ointment. You should, if possible, see your patient the very next day after ordering this treatment, in order to ascertain whether your directions have been complied with. You will almost invariably find that some mistake has been made, for it is rare to find a patient who will at first carry out every detail of the plan, and, unless everything is done properly, you will not get a satisfactory result.

This treatment should be continued, the rubbing with the soap and application of ointment being made with the same amount of care. At the end of six weeks a very decided change for the better will be observed. The vesicles will cease to form, the serous oozing will no longer be noticed, the congestion and infiltration will have disappeared, and the skin will have once more assumed a healthy appearance.—*Phila. Med. Times.*

* Vide Prescriptions and Formulas.

CUNDURANGO—ITS EFFECTS ON ULCERS, AND IN CERTAIN STAGES OF SYPHILIS.

In the *Medical Examiner* of Jan. 15, 1873, is a very interesting paper on *cundurango* by Prof. Ed. Andrews, Chicago. Dr. Andrews has made a series of carefully conducted clinical inquiries to determine the therapeutic value of this almost sphynx-like agent. From his paper we learn that there are affections in which cundurango has decided and even remarkable therapeutic merit, though next to worthless as a cancer-cure. He says:—

The cundurango used was the fluid extract prepared by Bliss & Keene, of New York, and was administered exclusively by the stomach, none being applied locally except in one instance. The dose was a teaspoonful for adults, and proportionately for children, four times a day.

The first thing which strikes the surgeon experimenting with it, is its marvellous power in promoting the growth of granulations in ulcers.

This change is visible in from two to ten days, and is sometimes very remarkable. The growth of granulations is followed by contraction of the ulcer, and often by rapid cicatrization. In some cases the remedy seemed after a time to lose its effect, but in none did it fail to bring at least some benefit. Most of the patients experienced an increase of the appetite, and many, but not all, a greater frequency of alvine discharges, so that constipation was often completely relieved by it. I did not observe any effect upon the kidneys, nor the other glands. The nervous system showed no evidence of being affected, except by a diminution of pain in certain cases. Some showed a decided increase of flesh, vigor, and good spirits, as if elevated by the influence of a powerful tonic.

The soft chancres and suppurating buboes were all cauterized with nitric acid at the outset, so that they should probably be considered as changed by the cautery from poisonous to ordinary ulcers. I have not tested the question of whether the remedy would succeed in an uncauterized soft chancre. On the whole, the indolent ulcers, following after the suppuration of buboes, did not as promptly respond to the medicine as ordinary ulcers, yet they were decidedly benefited.

In tertiary syphilis the results were excellent. This might have been foreseen, for the power of cundurango is most conspicuous in ulcerative diseases, and these are especially characteristic of tertiary syphilis. Even the eruptions of this stage, such as rupia, are ulcerative in their nature.

Then follows an abstract of 14 cases, showing the effects of cundurango in *common ulcers*, in *soft chancres*, and in the ulcerative erup-

tions of tertiary syphilis. In all these the remedy produced uniformly good results in the course of four days from the commencement of taking it. Its influence on the ulcerative process was remarkable. On the general system it acted as a powerful tonic and restorative, increasing the appetite and bodily vigor to a very considerable extent. Andrews regards its value in syphilis as beyond question. He thinks it combines alterative and tonic properties in the highest degree, but is of no value as a cancer-cure. He says: The conclusions to which our experiments lead seem obviously to be as follows:—

1. Cundurango has no equal in the materia medica in its power of increasing the growth of granulations, and hastening the cicatrization of ulcers.

2. As a corollary of this proposition, it seems probable that not only external ulcers, but chronic abscesses and some fistulas may be benefited by it. It may improve lumbar abscesses, for instance.

3. It probably may prove a valuable adjuvant to the treatment of ulcers of the nasal passages, of ulcerative cavities in the lungs, of ulcers of the mucous membrane, of the bowels, of the cervix uteri, etc., and possibly of all ulcerative and pustular skin diseases.

4. The growth of granulation cells is the same process, whether seen on the floor of an ulcer, around a fractured bone in the form of a provisional callus, or in the plastic effusion which glues together the lips of a wound healing by first intention. It is probable, therefore, that cundurango, given as a preparatory treatment, may greatly favor the success of cutting operations; and administered after surgical accidents, may promote the union of fractured bones, and the healing of open wounds and burns.

5. Cundurango acts favorably in soft chancre (after cautery), and on the ulcers and eruptions of tertiary syphilis.

6. My experiments on hard chancre are not yet extensive enough to be decisive, but, as far as they go, they tend to the idea that cundurango has no influence on hard chancre, nor on the earlier eruptions of secondary syphilis.

7. The remedy has not produced, under my observation, any effect on the growth and progress of cancerous tumors. It, however, often diminishes the pain and the discharges, and, if the tumor has been excised, hastens the healing of the wound.

8. Cundurango generally increases the appetite, diminishes constipation, and acts on many patients as a very powerful general tonic.

MERCURIAL TREATMENT OF SYPHILIS.

A discussion took place at the Medical Congress of Lyons, at the end of September last, which, from the importance of the subject, the competence of the speakers, and the exclusively practical nature of the arguments advanced, is worthy of attention. The Congress of Lyons shows that syphilographers are divided into three classes—the mercurialists, the non-mercurialists, and the eclectics. Among the first were included MM. de Méric, Pacchiotti, Clerc, Drou, and Rodet; among the second, MM. Armand Després and Drysdale; and among the third, MM. Diday, Gailleton, and Clément. Experience, it was argued by M. Clément, teaches us that if mercury does not attack syphilis, it at leasts affects its manifestations to an extent indeed that it may be said to abolish its effects, so that a syphilitic man may procreate perfectly healthy children. To this view many of the speakers were inclined, but considerable difference of opinion existed as to whether mercury should be given to a man who had simply a chancre. M. Diday adduced seventy-four observations directed to this point. Of these twenty-five had been at once submitted to mercurial treatment, while forty-nine only had general treatment during the primary period. Among the twenty-five, secondary affections, appeared, on the average, forty-nine days after the appearance of the chancre; while in the forty-nine, secondary affections appeared forty-three days after the *début* of the chancre; that is to say, six days sooner than the others. The effect of the mercury would therefore appear to be very slight on the secondary action of syphilis. M. Diday, however, further found that in the patients non-mercurialized at the outset slight secondaries occurred in thirty-four per cent., and severe in ten per cent.; while in those who had taken mercury during the period of the chancre the ratio of slight cases was only twenty-four per cent., and of severe twenty per cent. M. Diday concludes that the intensity of syphilis depends less on the treatment adopted at the outset than upon the constitution of the patient and the extent to which the general principles of hygiene have been observed. M. Clerc, who is a strong mercurialist, pointed out various circumstances that in his opinion explained the want of success frequently met with in the use of this remedy. First, it is given in insufficient doses; there is nothing to fear in producing slight stomatitis. Secondly, there are often defects in the mode of administration. Thirdly, hygienic conditions are often neglected. Insufficient exercise, the abuse of wine and tobacco, debauchery, often obviate the good effects of a mercurial course.

M. Clerc commences the administration of mercury as soon as the chancre appears, because from this date the system is affected. He

does not believe or anticipate that it will arrest its development entirely, but he thinks it exerts a material influence in retarding their appearance and reducing their violence. M. Gailleton, a partisan, like M. Diday, of the doctrine of successive developments and extensions of the disease, employs the mercury only when secondary symptoms have manifested themselves; there, he thinks, it stops. M. Rodet, of Lyons, commences the use of mercury at once after the chancre has made its appearance. He pushes the remedy vigorously, and changes the preparation frequently, to get a speedier and more prolonged action. Commencing generally with the bichloride in increasing doses, he exchanges it after a time for the protiodide; and finally, gradually diminishing the quantity of this, replaces it with iodide of potassium. M. Pacchiotti thought that mercurial frictions had been too much neglected; while M. Drou alluded to the employment of the method of subcutaneous injection, which he was of opinion might sometimes be advantageously employed instead of other plans.—*Practitioner Pacific Med. & Surg. Journal.*

LENTIL-MEAL.

At a time when cheap and efficient substitutes for animal food and for bread are being much sought, we shall render a service in directing attention once more to the highly valuable qualities of lentil-meal, properly prepared and ground to a fine powder, and mixed with some other impalpable nitrogenous meal, such as rye-meal. The value of this combination has been recently tested anew by Dr. F. W. Beneke, of Marburg, who is led very earnestly to recommend its use as a substitute for animal food for poor people, in convalescence from sickness, for invalids generally, and for many forms of indigestion. For the latter purposes, sold at a most scandalous price as "revalenta," and accompanied by flaming testimonials, it has long enjoyed a considerable reputation amongst wealthy dyspeptics, and Dr. Beneke records his gratitude for the saving of the life of one of his children by its use.

His observations as to the best mode of preparing it for general use are very interesting. He points out that the Leguminosæ contain nitrogenous and non-nitrogenous substances in the proportion of nearly 1:2.0—2.2; they contain a sufficient amount of phosphates, and a small quantity of fatty matter, part of which resembles the fat contained in the yolk of egg, and part is cholesterine. Such a meal is quite capable of replacing animal food, apart from its kreatinin; and with this view he experimented upon these meals, but found that, as ordinarily prepared, they were much too coarse to be easily digested. At

last, however, he found a lentil-meal and also a rye-meal both equally carefully prepared, which, when mixed together in equal proportions, produced a most admirable nutriment for convalescents from acute disorders, for those laboring under certain gastric ailments, and as a substitute for animal food for poor people. A healthy adult uses nitrogenous and non-nitrogenous elements, the latter reckoned as starch in the proportion of 1:5. Human milk contains the same ingredients in the proportion of 1:3.8–4. Lentil-meal contains them as 1:2, and rye-meal as 1:5.7, while a mixture of the two in equal quantities contains those components in the proportion of 1:4, a proportion of which may, of course, be varied according to desire, or the needs of the case. These impalpable meals Dr. Beneke has been in the habit of procuring from W. J. von Coppenaal, 556, Reguliers-Breeskaat, Amsterdam, at 40 cents per kilogramme for the rye-meal, and 60 cents per kilogramme for the lentil-meal (about 8*d.* for the one and 1*s.* for the other 2¼ lbs., the price of the same quantity of revalenta being 6*s.*). These meals, from containing little water, have four times the nutrient power of beef, weight for weight, so that their relative values as articles of diet may be readily calculated. The digestibility of these meals, and the consequent absence of flatulence during the process, depends primarily upon the impalpability of the powder to which they are reduced; and secondly, on the mode of preparation. The meal should have a little salt added, then be mixed with cold water, and boiled for half an hour or an hour. The addition of a little extract of beef makes the preparation tasty, without adding greatly to its expense.—*Brit. Med. Journ.*

KUMISS.

In a paper by Prof. Richter, on the medicinal use of milk and whey, it is stated that kumiss, a substance prepared in northern Asia by the fermentation of mare's milk, according to an analysis in June, by Hartier, an apothecary, contains in 100 parts, 2.05 of fat, 2.20 of milk sugar, 1.15 of lactic acid, 1.12 casein, 28 salts as solid constituents, 1.65 alcohol, and .758 carbonic acid. Compared with an analysis of the milk this shows loss of nutritious matter (cheese, fat, sugar), but gain of lactic acid, carbonic acid, and alcohol. To these then must be ascribed the peculiar effects of kumiss; and they increase in amount if it is subjected, like wine, to a subsequent fermentation. It has a pungent, pleasantly acid taste, with an after-taste of almonds, and an acid odor somewhat similar to that of the horse. The effect upon healthy individuals is that of a pleasant, cooling, thirst-allaying beverage. It does not injure the stomach or bowels, has no laxative effect,

except when too fresh or deteriorated, and is especially wholesome in hot weather. Resembling beer, it produces a slight intoxication, or rather exhilaration, without loss of consciousness, and with subsequent inclination to sleep. It produces no unpleasant after-effects, headache, etc. When used for several weeks the body increases in size and weight, the skin becomes moist, and the countenance acquires a peculiar fresh complexion. Young subjects who do not improve on the most nutritious diet, seem gifted with new life after the use of kumiss. Dr. Von Maydell, Medical Inspector, says that it combines the effect of animal food with the stimulating effect of carbonic acid on the vascular system. It has acquired a great reputation in Russia as a specific for consumption. Ucke and Stahlberg ascribe remarkable curative properties to it, in cases of chronic—not acute, catarrh of the respiratory organs, especially when accompanied by free expectoration. This effect, in chronic bronchial catarrh, manifests itself almost on the first day of the use of the kumiss; and it is highly probable that it owes its reputation as a cure of consumption to this fact. The use of kumiss is not desirable in the case of plethoric persons, or a predisposition to apoplexy, congestion or hæmorrhage, sluggishness of the liver or spleen, pregnancy, organic disease of the kidneys, bladder, heart, or vascular system, or hectic. Blood-spitting is not a contra-indication, and the cause of some cases of blood-spitting, attributed to the use of kumiss, was the excessive summer heat of the Steppes.

Contrary to the opinion of many that it is necessary to use kumiss in the Steppes, where it is prepared, in order to enjoy its full effect, the resorts recently established elsewhere (first by Russian physicians) have met with success. Among these are those of Dr. Witkof, in St. Petersburg, and Stahlberg in Moscow, the latter of whom earnestly disputes the opinion that kumiss is only effective in the Steppes. Out of Russia, goats' and even cows' milk is employed, with the addition of the sugar necessary for fermentation, and in order to imitate old kumiss a little wine is added. From Ottenstein one kind is sent out for women, children, and feeble persons, and another to men accustomed to spirituous beverages. The latter evidently contains wine, and the former reminds one of seltzer-water and milk. Although doubt has been expressed as to its transportability, it seems that it has long been forwarded from the Steppes to the interior of Russia, and at present different manufactories send out large quantities of milk-wine that will not deteriorate for several months.

Quinine in Febrile Diseases of Children and in Whooping-Cough.—Hagenbach (*Jarb. für Kinderheilk.*) advocates the use of quinine in the treatment of febrile diseases of children. By this means the disease is rendered mild, and frequently complications of nervous and respiratory organs are prevented. He uses quinine in all forms of the febrile state, when the temperature is continuously high for several days, combined with the bath between 68° and 75° F., repeated every three hours as long as the temperature remains above 102° F. In pneumonia he uses baths with older children; with smaller ones, wrapping in cold wet sheets is preferred, and less dangerous; at the same time quinine is given. He treats scarlatina almost exclusively with baths and quinine. This treatment he has found of service in his late cases of erysipelas, and also rheumatism, periostitis, and coxitis, with high fever, and several surgical diseases. The author lays stress on this combined action of baths and quinine. He gives the quinine in one large dose, or two smaller ones, at half-hour intervals, and when the temperature is below 102° F. it is left off. No bad effects were noted. The doses were, for children between one and two years old, from 5 to 10 grains; between three and five years, from 8 to 16 grains; between six and ten years, from 10 to 20 grains; between twelve and fifteen years, from 10 to 30 grains. The larger doses are greatly to be preferred. The beneficial effects upon the sensorium, the circulation, subjective systems, etc., by this course of treatment, are beyond doubt as great in children as in adults. The strength is better kept up and the convalescence hastened.

Whooping-cough has been treated by Steffer, since the autumn of 1868, with quinine with good results. In some cases the effect was most positive. On an average, the dose given to children, between two and five years, varied between 8 to 10 grains in four hours. In one case it was given by enema, because the child would not take it by the mouth. Nine enemas were given in the course of three days, each containing ʒ ss.—*Medical Archives.*

BELLADONNA IN OPHTHALMIA.

Mr. Henry Power writes to the *Practitioner*:—

The following is a *résumé* of one of the cases that has recently been under my care, showing the benefit that may be derived from the use of the extract of belladonna in obstinate phlyctenular ophthalmia:

M. C., æt. four, was brought to me in the beginning of January of the present year. She had had measles (not an unusually severe attack)

in August, 1871; this was followed by a stoppage in the nostrils and herpetic eruption on the lip and on the right ear. At the end of August her mother took her to Yarmouth for a month. She was ailing all the time she stayed there, complaining of thirst, with restlessness at night, languor, and loss of appetite. These symptoms continued up to November, when the right eye became affected. She was taken to an ophthalmic hospital, when some tonic medicine was ordered for her, and a poultice was directed to be applied. A crop of pustules appeared over the brow, temple, and cheek, and the left eye became affected. I then saw her, and found that she was suffering from a well-marked attack of phlyctenular ophthalmia. On examining the eyes several pustules were visible on the conjunctiva at the margin of each cornea, whilst superficial abrasions or ulcers were apparent on the corneæ themselves, the right being much the more severely affected, so that a large part of its surface was cloudy. She was ordered a purge, and a powder containing three grains of hydrargyrum c. cretâ with one of quinine, thrice daily. A four-grain solution of atropine was dropped in, and a lotion of extract of belladonna given to take home, and to be used frequently. But little improvement resulted, though the mercury and quinine were continued for a fortnight. The bowels being somewhat disordered, and the lips and ala nasi having some pustules upon them, it was thought likely that there were worms. Another purge of compound jalap powder and a turpentine injection were therefore ordered. No worms, however, were observed in the motions; cod-liver oil was now prescribed, and after a short time a little steel wine was added to it. The use of belladonna lotion was continued. This plan was persevered in for a month, with little benefit, the child sometimes opening the eyes in the evening and playing about, but always coming to me in the morning with intense photophobia. The mother was exceedingly intelligent, and assured me that the bowels were regular, and that the food given to the child was carefully selected, wholesome in quality, and though its appetite was variable, yet, upon the whole, the quantity was sufficient for its needs. Calomel powder was now applied directly to the cornea for several days, but ineffectually, so far as the relief of the photophobia was concerned.

Finding that the symptoms were stationary, I now determined to tap both eyes with a broad needle, and allow the aqueous humor to escape. The benefit was considerable, the child opening the eyes on the following days for some hours, and I thought recovery would take place without further trouble. However, a relapse soon took place, and she was now placed upon one-sixth of a grain of good extract of belladonna three times a day. In two days the mother brought her to me obviously greatly improved. The intolerance of light had

greatly diminished, and she even saw to pick up a pin on the carpet. She continued the use of the extract for a fortnight, when it was given up and some quinine mixture ordered. A few days later she went into the country. This child has lately been seen by me, looking fresh and rosy, with only slight nebulæ on the corneæ of both eyes, but able to bear strong light perfectly; and I can feel no hesitation in attributing the improvement here observed to the internal use of the belladonna, it was so immediate and proved so persistent.

THERAPEUTIC VALUE OF EUCALYPTUS GLOBULUS.

Dr. Gimbert, in the *Archives Générales* for February, 1873, gives some interesting facts relating to the physiological action of this drug. He says:—

The oil of the above plant contains almost all its active properties. A moderate dose of this oil, ten to twenty drops, at first accelerates the pulse, produces pleasant general excitement, as is shown by an irresistible desire for moving about, a feeling of buoyancy, increased appetite, strength, and sexual appetite. It will not intoxicate in sufficient doses, as opium or alcohol, but, unlike these drugs, its effects are followed by a general calmness and soothing sleep. After the stimulating effect has passed, the arterial tension is diminished and the temperature falls. Even in moderate doses this fall is from one to two degrees. The pulse becomes less frequent, and may fall to fifty beats per second. The senses, including the muscular senses, are blunted. The functions of the brain are unaffected. The reflex functions of the cord are depressed. When fatal, eucalyptus kills by destroying the excito-motor functions of the cord. An old man by mistake took eighty drops of the essential oil. It produced a feeling of internal heat and paralysis of the extremities. He was unaware of the existence of his extremities when he shut his eyes. When he tried to move his legs or arms they obeyed him imperfectly, the movements being feeble and disorderly. A cup of coffee removed these symptoms. The Dr. points out a close resemblance between this remedy and bromide of potassium, and thinks that when employed as a sedative in tetanus, scarlet fever, or other acute diseases, the thermometer should be used. As in some doses it stimulates the sympathetic, and promotes capillary circulation, he recommends it in congestions and paralysis of the capillaries. It will disperse many cerebral and pulmonary congestions, but it is not admissible in acute bronchitis, as it over-stimulates. In large doses the stimulating effects are slight, and it soon produces asthenia and paralysis.

This oil is absorbed by the stomach and lungs, and eliminated by the lungs, kidneys, and skin. In its passage through the lungs it contracts the capillaries, promotes circulation, and hence deepens respiration, and removes congestion if present.

It makes the urine smell of violets, and doubles the amount of urea eliminated in a given time. Escaping by the skin, the essential oil renders the sweat odorous. To sum up his conclusion, the Dr. says: It is an antiseptic by preventing decomposition of organic substances, and particularly of blood. It is a powerful general stimulant through its primary action on the nerve centres and sympathetic, thereby quickening the capillary circulation. Through its influence on the nervous system it is anti-spasmodic. By diminishing the excito-motory activity of the chord, by lessening animal combustion, the frequency of the respiration and the circulation, it becomes a febrifuge and sedative. As an external application in neuralgia, he uses a liniment of one part of the essential oil to five parts of sweet almond oil. The inhalation of the tincture or fumes of leaves is said to relieve the spasms of asthma.—*Detroit Review of Medicine and Pharmacy.*

SOME OF THE DISINFECTANTS.

Dr. Endemann, the chemist to the New York Board of Health, has had considerable experience in valuing some of the most popular of the disinfectants of the day, and the result of his observations may be summed up as follows:—

1. *Metropolitan Disinfecting Fluid.*—This famous disinfectant is composed of 90 per cent. of a saturated solution of sesquichloride of iron, and 10 per cent. of carbolic acid. If it be entirely neutral, its operation is quite effective; but the chief difficulty encountered with it was in its acid character, which destroyed articles brought in contact with it, and often liberated bad gases.

2. *Girondin* disinfecting fluid is composed of zinc and copper salts, and can only be obtained on a large scale in countries where these salts are the incidental products in extensive chemical manufactures.

3. *Chloralum* has been subjected to a thorough trial, and found wanting. It is essentially composed of the hydrated sesquioxide of aluminum, and in its action has the tendency to liberate sulphuretted hydrogen instead of fixing it.

4. *Bromo-chloralum* is the preceding with a little bromine added to it; but as this bromine is in combination with alkaline bases, it is of no effect; and the disinfectant was found to be no better than it should be. The fact was brought out that forty years ago, M. Gannal, in

France, proposed chloride of aluminum for the embalming of bodies, but it did not seem to find acceptance, and was forgotten until Mr. Gamgee recently revived it for the preservation of meat. It appears to have disappointed the expectations that were raised in reference to it; also as a disinfectant and antiseptic its value has been overrated.

5. *Egyptian powder* was declared to be only a little less disgusting than the bad odor it was intended to disinfect. The remedy was worse than the disease. It appears to be essentially clay, mixed with a few per cent. of the carbolic acid contained in refuse tarry liquids, and was said to have a decidedly disagreeable smell.

6. *Dry Earth and Peat.*—Dr. Endemann gave us the result of his experience, that for the disinfecting of night soil, there was nothing so valuable as dry earth and peat. Other disinfectants poisoned the rich soil and destroyed vegetation, but the simple earth prevented the growth of germs, and thus stopped the spread of disease and added to the growth of plants. We cannot dispense with disinfectants and antiseptics on all occasions, but there are many instances where dry earth could be more effective, while it is cheaper and more easily handled.

Professor Joy confirms the observations of Dr. Endemann, and states that he had tried the earth-closet system for two or three years, and he is convinced that it is destined to supersede all other methods of getting rid of the fecal matters, both in the city and in the country. He believes that it is better to stop the cause of disease at the outset, rather than to scatter it broadcast through water-closets and open privies, and then to try to prevent its further spread by the use of costly chemicals. The open country privy and the city water-closet he declares to be the very hot-bed for the germination of the worst forms of disease. The ashes of hard coal, which the scavengers carry in enormous quantities from every house in the city, can be used as a substitute for dry earth. It is only necessary to run this through a tolerably fine sieve, and to use it in the commode, and after use to pass it into the garbage barrel, to be carried away in the carts.

All that any family requires is a hopper-shaped reservoir for holding the sifted ashes, a galvanized iron-hod, and a pull-up similar to that which is provided in water closets. It is easy enough to try the experiment, as commodes of different patterns are now kept on sale. Such a use of fine coal cinders would be very valuable; and the material thus obtained from private houses would be highly prized by farmers.—*Druggists' Circular.*

PHYTOLACCA DECANDRA IN THE TREATMENT OF MAMMARY INFLAMMATION.

Dr. Biggers, of La Grande, Oregon, reports (*Amer. Journ. Med. Science*) the following cases in which he employed this remedy with the most gratifying results:—

Case I.—Mrs. H., on third day after labor with her second child; mammæ commenced swelling, from an accumulation of milk. Did not see her until the symptoms were so urgent that there could be no mistake about the commencement of an abscess.

I pursued the anthiphlogistic treatment, both general and local, until there was no promise of improvement; on the contrary, the case was continually getting worse. I then prescribed fluid ext. phytolacca decandra, gtts. xx. every three hours, in water. A very marked improvement took place in twelve hours, and in thirty-six hours the patient was well. There was also a suppression of the lochia, which was also re-established.

Case II.—Mrs. B., whose child died a few hours after its birth, was attacked, after the secretion of milk took place, with inflammation of the mammary glands, from over-distention, and had the milk withdrawn very regularly, yet the case continued worse, threatening an abscess. I prescribed fluid ext. phytolacca decandra, gtts. xx. every three hours. Marked improvement in ten hours, and a complete recovery within thirty-six hours. There was also a suppression of lochia in this case, which was re-established with the cessation of the mammary inflammation.

Case III.—Mrs. G., at the fourth month of pregnancy, was attacked with inflammation of both mammæ, severe pain, swelling, and very great heat, with severe rigors, amounting to a distinct chill. I prescribed fluid ext. phytolacca decandra, gtts. xv. every three hours, in water. The symptoms all subsided, and the patient fully recovered within forty-eight hours with no other treatment.

I have used the remedy above named in many other cases of mammary inflammation, and it has never yet failed in a single case.

The preparation used was Thayer's fluid extracts, for the reason that the plant does not grow in this State. A tincture from the green root would, I think, be more reliable.—*Med. Archives.*

MIXTURES OF ETHER AND CHLOROFORM—THE VIENNA MIXTURE.

About two years after the introduction of chloroform, a mixture of ether and chloroform began to be employed. We do not know

who first introduced this compound. We ourselves were using it in 1850; but whether independently or in the track of some other experimentalist, we cannot at this moment recall. The proportions of ether and chloroform advocated at first were equal parts by measure, and the mixture was inhaled from a sponge or from Snow's inhaler. From the outset, Snow, who during his life was properly accepted as the best experimentalist and practitioner in the department of anæsthesia, was opposed to the mixture of ether and chloroform. His opposition was based on very sensible reasons. Ether, he said, is about six times as volatile as chloroform—that is to say, if equal measure of each be placed in two evaporating dishes, kept side by side, at the same temperature, the ether evaporates in about one-sixth the time of the chloroform; and when the two liquids are mixed, although they then evaporate together, the ether is converted into vapor much more rapidly. In whatever proportions they are combined, he argued further, before the whole is evaporated, the last portion of the liquid is nearly all chloroform. The consequence of this, he continued, is that at the commencement of the inhalation the vapor inspired is chiefly ether, and towards the end nearly all is chloroform, the patient experiencing the stronger pungency of ether when it is most objectionable, and inhaling the more powerful vapor at the conclusion, when there is most need to continue cautiously.

It is worthy of observation, in parenthesis, that the above admonition given by Snow, in the same sense if not in the same words, twenty years ago, and repeated by him in the words we have quoted in 1858, has been independently restated by Mr. Spencer Wells in the present year. Speaking of the employment of the mixture of ether and chloroform in cases of ovarian operation, Mr. Wells says: "I tried a mixture of chloroform and ether in various proportions, but soon became aware that the patient was at first only affected by the lighter vapor of ether, and was then subjected to the action of the chloroform just as she was least able to bear it."

The criticism passed upon the mixture of chloroform and ether at first by Snow, though itself exceedingly correct, would possibly have carried but little weight had distinct success attended the practice, and had any definite proportion of the two fluids been decided upon by competent authority. A mixture called the Vienna mixture, containing six parts of ether to two of chloroform, was of definite strength; but the mixture in our own hands and in the hands of other administrators proved uncertain, and therefore lost ground. We administered it in one case of removal of the lower jaw, in two cases of ovariotomy, in one case of amputation of the leg, and in various minor operations. Report of its use from the continent was favor-

able; it was used, it was said, in Vienna eight thousand times without a casualty.

Notwithstanding many facts in support of the Vienna mixture of chloroform and ether, we are forced to admit that it is not a perfect anæsthetic. It has the vice Snow predicted of it—it is irregular in its action. It is slow in action; for, indeed, the narcotism immediately induced is from the ether, not from the chloroform, while the action of the chloroform becomes manifest later on, and in a manner most disagreeable both to the administrator and to the operator.

When we give chloroform simply, we induce a first stage or degree of narcotism, and then a second stage or degree, with some excitement, and it may be with convulsions, tetanic rigidity, retching or vomiting. During these stages the surgeon does nothing; but there succeeds a third stage—one of quietude—during which the operation is commenced, and, if extreme muscular relaxation be not needed, is completed. Here all is clear practice—a direct course for an unimpeded operative procedure when once the anæsthesia has reached the proper degree.

When ether is administered simply, there is often resistance in the early stage of narcotism, then, sometimes, convulsive movement, with undue filling of the veins, over-action of arteries, flushing of the face, and occasional vomiting. This stage is followed by a stage of comparative quietude, during which the operator performs his painless task.

We have drawn these stages in bold outline for the sake of giving a clear definition of the process of anæsthesia as induced by the two agents under consideration. In some instances the different stages are only imperfectly delineated, the patient passing from the first to the third degree of narcotism almost imperceptibly; but the rule is for a series of stages more or less marked and more or less prolonged.

In administering a mixture of chloroform and ether this order of degrees or stages is broken—broken for the precise reason stated by Snow, viz.: the unequal volatilization and diffusion of the two substances. Thus the first and second stages of narcotism by the ether may be developed, and a third stage follow, during which the surgeon commences his operation; but as he proceeds the action of the chloroform may begin to be felt, and rigidity of muscle, or retching or vomiting, may complicate and delay his proceedings. We observed these difficulties so often that we gave up the use of the ether and chloroform mixture, although no fatal accident, and we believe no special indication of danger, ever resulted from it in our hands.

It was stated in a previous paragraph that in Vienna the mixture of chloroform and ether had not, during a long experience, been

attended with fatal results. It must not thereupon be inferred that no death has followed such administration. The *American Journal of the Medical Sciences* furnishes the record of a death in July, 1857. Dr. Crockett, of Wytheville, in Virginia, was about to operate on a boy five years old, to remove a tumor from the back. In order to induce anæsthesia, chloroform and ether were administered in combination, in the proportion of one part of chloroform to four of ether, the parts being determined by fluid measure. This actually was the Vienna mixture. One fluid drachm of the mixture was poured on a funnel-shaped sponge, and the administration was continued by Dr. Crockett until anæsthesia was complete. The sponge was then given to Dr. Kincannon, the family physician, who sustained the narcotism, and carefully watched the pulse. As soon as the patient was insensible the operation was commenced, and was very quickly completed. Whilst Dr. Crockett's son was sponging the wound, and waiting to see if any more arteries (beyond those that had been tied) would spring, the little boy began to vomit and became pulseless. He ejected a small portion of the contents of the stomach. He was immediately placed in the prone position, the tongue was examined to see that it had not fallen forward, and the Marshall Hall method of artificial respiration was thoroughly carried out, but without avail. The patient died within three minutes after the commencement of the vomiting. Dr. Crockett remarks on this case that there was nothing whatever to account for the fatal action of the anæsthesia. The last artery that was tied yielded bright arterial blood, showing there was no asphyxia; and anæsthesia was never carried so far at any stage as to produce stertor, while the circulation and respiration continued perfect up to the moment of the vomiting.

It is a curious circumstance that Snow, who has commented on this case, attributed the death to loss of blood. Dr. Crockett says the loss of blood was probably four ounces, certainly not six—a loss altogether insufficient to account for death from hæmorrhage. Moreover, the symptoms were not those of death from hæmorrhage, but were definitely those that mark one form of death from chloroform. In plain truth, the case is typical, in an extreme degree, of the influence of chloroform upon a subject already under the influence of ether, and Snow's original observation as to the danger of using a mixture of two substances having different boiling points and different rates of diffusion of vapor, explains the cause of death faithfully. It is because the case stands out as a striking illustration of the nature of the special danger attending the use of ether and chloroform in mixture, that we have introduced it so prominently in this place.—*London Lancet.*

The Therapeutical Uses of Cabbage Leaves.—Dr. Blanc has written an extended article on this subject in the *Revue de Thérapeutique*. His conclusions are as follows:

1. The cabbage leaf excites and augments the secretion of ulcers, ulcerations, vesicles, and pustules. It has the same action on the integuments affected by an erysipelatous or furunculous inflammation, but removes tissues in a morbid condition.

2. This augmentation of suppuration is constantly followed by an amelioration and often by a cure. It is the condition necessary to the result, and the property of the leaf which determines this result is an indirectly curative property.

3. This property does not consist in any principle which the leaf yields for absorption, but rather in an affinity which the leaf has for the vitiated secretions.

4. The leaf exercises this affinity on open ulcers, or on ulcers covered by a thick or thin scab or crust; it exercises it on the thickened epidermis, or where it is converted into thickened rind-like membranes.

5. When the tegumentary affection is wide-spread or general, the action of the leaves on the parts where they are applied benefits the whole disease.

6. The matter in the parts not covered by leaves is absorbed and at once directed under the leaves, to be immediately excreted at that part.

7. Treatment, by the leaves, of a suppurative affection prevents reabsorption and consequent pyæmia.

8. The cure obtained by this means is more complete and certain than by any other, because it is brought about only when the cause and products of disease are eliminated from the system.

9. This mode of treatment is in perfect harmony of action with the *vis medicatrix naturæ*. This essays, in skin diseases, to eject from the system their cause and effects, whilst the leaves aid this action.

10. The cure of an ulcer by the leaves, however wide-spread and long-standing it may be, is without danger, and relapse is very rare.

11. The cicatrices obtained by the leaves are remarkable for their small degree of deformity.

12. Small-pox, measles, and scarlatina, treated by applications of the leaves, have few or no sequelæ; *e. g.*, phthisis is not to be feared.

Gelsemium as an Anti-periodic.—Dr. William W. Murray, of Baltimore, in a recent article (*Medical and Surgical Reporter*) reports five cases of malarial fever, three of intermittent, and two of remittent, which were rapidly and effectually cured by the use of gelsemium.

The form he employs is usually the tincture. As to the method of administration and the value of this drug, he says as follows:

In the use of the gelsemium, I am governed by the effect produced, whether the quantity required to produce that effect be small or great. I give it generally in five-minim doses, and I think this the safest plan, because the effects can be regulated exactly; whereas, if large doses be given, we may have an overwhelming effect produced at once, which would be at least alarming, and possibly dangerous.

While the cases in which I have employed it are not very numerous, the results were of such a character as to convince me, at least, that it is not only equal to quinia in breaking in upon the chain of morbid phenomena which characterize intermittent fever, but that it is infinitely superior to that article in curing the disease. It is tasteless and cheap, both of which are additional advantages which it possesses over quinia.—*Chicago Med. Journ.*

Sick-Headache.—In a report on the treatment of this distressing affection, Dr. Wilks recommends three remedies. To cut short an existing attack, he gives bromide of potassium in doses of gr. xv. to xx. One dose is often sufficient. As a prophylactic, he uses the cannabis indica. Of guarana, he says:—"Thirdly, guarana has been introduced to our notice as a remedy for sick-headache, and here again we have a very valuable addition to our Pharmacopœia. In many instances, especially those of ladies, I have had the most positive assurance given to me of the power of this drug in arresting headache, so that not the slightest doubt can be entertained of its immense value. A dose is usually taken when the headache is approaching; and if this is not quickly successful in arresting it, a second powder is swallowed; after an hour or so, if the remedy is to be useful, the headache has disappeared. I know of several cases in which the greatest enthusiasm is expressed by patients as to its merits. At the same time, I am constantly hearing of cases where it has failed. I am now trying it in smaller doses by daily administration.

"I feel certain that these three drugs—bromide of potassium, cannabis indica, and guarana—constitute a most important addition to our nervine medicines, and that in them we have remedies against a terrible complaint which, a few years ago, constituted the opprobrium of medicine. I might say that I know of cases where galvanism has very speedily cured a pain in the head; and I can call to mind the case of a lady, where the application of the bisulphide of carbon invariably relieved the most severe headaches.—*British Medical Journal.*

Galvano-Emesis.—Dr. Charles Fox records the history of a child that was brought to him in a nearly asphyxiated state from eating poison mushrooms. In attempting to overcome the asphyxia by the faradic current, it occurred to him that vomiting might be induced at the same time. He accordingly introduced one electrode into the upper part of the œsophagus, and applied the other to the epigastrium. Vomiting ensued immediately.—*British Med. Journ.*, 1872.

Simon on the Artificial Dilatation of the Anus and Rectum, for Exploration and for Operation.—Dr. G. Simon (*Archiv für Klinische Chirurgie*, vol. xv. part 1, 1872) has shown that it is possible to introduce the whole hand even into the male rectum, and to explore and perform operations without inflicting any injury on the walls of the bowel. The dilatation may be effected with or without incision of the sphincters. In the adult under chloroform, by gradual dilatation, the fingers, half the hand, and then the entire hand and forearm may be introduced, if there be no obstruction in the pelvis. In most cases, if the hand does not exceed 9½ inches in circumference, there will not be occasioned more than a slight tearing of the anus, and only very exceptionally a rupture of some of the fibres of the sphincter. When the hand has penetrated the rectum as far as the sacral promontory, three or even four fingers may be carried on up the sigmoid flexure, and then, through the walls of the gut, the whole abdominal region as far as the kidney and the umbilicus can be examined without danger. Thus a more precise diagnosis may be made of affections of the uterus, ovaries, and even the stomach and spleen. With the introduction of only half the hand, the base of the uterus and even the ovaries can be reached; in men the bladder can be felt with precision, and the presence of calculi, their number and size, can be ascertained.

In two cases of ovarian cyst, Dr. Simon was able to determine, by this method of examination, the length and thickness of the pedicle, the absence of adhesions in the pelvic cavity, and lastly, the presence in the fundus of the uterus of two fibrous growths, each as large as a cherry-stone. The operation allowed the verification of this diagnosis. Dr. Simon thinks that full dilatation by the whole hand should be employed in many affections of the rectum; it permits the ready removal of foreign bodies, and in ulceration of the rectum it favors cure by allowing a free discharge of all matters; in fistula it permits the introduction of a speculum analogous to that of Marion Sims, so that internal openings can be seen, and operations upon fistulæ, situated high up the bowel, can be performed with certainty.—*London Medical Record.*

New Basis for Suppositories and Pessaries.—Mr. Martindale proposes, as a substitute for cocoa-butter, a mixture, in equal proportions, of oleic and stearic acids. He claims for this new material the following properties, which make it superior to any of those at present employed as a basis for suppositories:—1. It has a very low fusing point, melting readily at the temperature of the body. 2. It contracts on solidifying, so that the suppositories leave the mould without difficulty. 3. It is a solvent for pure alkaloids, such as morphia, atropia, etc., and is itself readily absorbed by the epidermis and mucous membrane. 4. Owing to the partial crystallization of the stearic acid, it becomes quickly firm, so that suppositories made from it are not liable to lose their form after removal from the moulds. 5. The proportions of stearic and oleic acids can be varied to suit the temperature of summer or winter, or the character of the other ingredients prescribed with them.

Mr. Martindale objects to soap, suggested as a substitute for oil of theobroma by Dr. Redwood, on the ground that it is difficult to form the suppositories into a proper shape, and also, because of the free alkali and the chloride of sodium which soap generally contains.—*The Chemist and Druggist.*

THE FIRST TRACHEOTOMY WITH THE AID OF THE GALVANO-CAUTERY, IN GERMANY, FOR MORBID GROWTH CLOSING THE GLOTTIS FROM BELOW.

Verneuil, in France, was the first one who performed this operation in this manner, and Voltolini, in Germany, the second.

The subject was a wealthy farmer. The disease was a berry-like growth within the larynx, obstructing the glottis from below, the result of chronic laryngitis, caused by excessive exposure in the late Franco-German war. Aphonia, emphysema of both lungs, excessive dyspnœa, slight cough and expectoration, acceleration of the pulse, were the prominent symptoms. Appetite was good, but the threatening danger of suffocation demanded a removal of the morbid growth.

Repeated efforts to remove it through the mouth did not succeed, on account of unfavorable local conditions, backward inclination of the glottis, etc.; and laryngo-tracheotomy, with removal of the morbid growth through the tracheal opening, was agreed upon by Dr. Voltolini and Dr. Reichel, and, at the proposition of the latter, with the aid of the galvano-cautery.

A small platina scalpel was used as galvano-cautery. It penetrated all parts without the slightest effort or resistance, almost without any hæmorrhage; but after the patient had, at the commencement of the operation, been only with difficulty rescued from the unfavorable effects of chloroform, the sudden entrance of air through the canula into the tracheal opening produced again an alarming collapse, from which the patient could only be aroused with the very greatest difficulty. Under these circumstances, it was deemed imprudent to attempt the removal of the morbid growth at once. On laryngeal examination on the fourteenth day after the operation, the growth could not be discovered; it was almost entirely gone, and the patient could breathe freely with the tracheal opening closed by pressure, and blow air through the nose.

Professor Voltolini's acknowledged skill in laryngoscopic examinations, and the excessive dyspnœa which required the operation, exclude the idea of a delusion in relation to the existence of a new growth within the larynx; and therefore only the supposition that the growth situated immediately below the vocal cords, which extend nearly to the lower edge of the thyroid cartilage, was touched by the heated cautery when it penetrated the lower edge of the ligamentum crico-thyroideum and was thus destroyed, and afterwards vanished by suppuration.

Voltolini claims the entire painlessness and the very trifling hæmorrhage as the advantages of the galvano-caustic method of performing tracheotomy. Verneuil's observations in relation to these points coincide with those of Voltolini, and while the two operations have not brought anything to light to forbid its execution, it will have to be performed many more times before its real surgical value can be properly defined.—*Berliner Klinische Wochenschrift*, No. 41, 1872.—*Atlanta Med. & Surg. Journ.*

Styptic Cotton.—Dr. Robt. Rohland, of this city, has prepared a styptic cotton (gossypium stypticum) which has proved to be a useful addition to our means of arresting passive and sometimes pretty active hæmorrhages. It has the advantage of cleanliness, and possesses no irritating properties. It is prepared by boiling the cotton in a solution of alum and gum of benzoin. After the cotton is dried and picked it is saturated in perchloride of iron. It is put up in boxes of convenient size.

Treatment of Diabetes Mellitus.—Professors Cantani and Primavera, of Naples, report the most extraordinary success in their treatment of this obstinate disease. Their statements are, in brief, as follows:—

1. Their patients have all, with rare exceptions, recovered.

2. Stout persons have lost but little weight during the treatment, while spare ones have sometimes gained as much as twenty-five pounds.

3. Though the urine has become rich in urea and uric acid, the patients have never shown symptoms of gout or urinary calculi.

4. The treatment was also successful in arresting some instances of albuminuria that accompanied the disease.

5. The cure consists in an exclusive meat diet, and by this term fish is also included; further, at each meal is to be taken lactic acid ℈ij.--iv. in water ℥ vj. As a substitute for wine at dinner, alcohol ℥ ss. with water ℥ vj. is given.

Alcohol and lactic acid are designed to replace the saccharine and starchy elements of the food. To obtain a permanent cure it is necessary to persist in the treatment for several months after sugar has ceased in the urine. Then the patient may gradually return to a mixed diet.—*Allgemein. Med. Central. Zeitung.*

Puncture of the Abdomen for the Relief of Tympanites.—The *Dublin Quarterly Journal of Medical Science* mentions three cases in which marked relief was afforded by this operation. In one the distention was caused by the pressure of an ovarian tumor on the intestine. The puncture was made in the cœcal region, and was repeated daily, more than fifty times, at the request of the patient. At the autopsy no traces of the punctures could be observed. The second case was that of a man sixty-one years old. Eight punctures were made in fourteen days, with great relief and no unpleasant results. In another case, reported in the *Practitioner*, the operation was performed upon a patient with double pneumonia. The punctures, two in number, were made over the transverse and descending colon, and gave great relief. The patient, however, died of pneumonia, but no traces of the puncture could be found after death, except on the surface of the body. The instrument used was an exploring trochar.

To Break up a Cold.—Dr. Dobdell recommends the following plan for breaking up a cold. If followed faithfully after the first appearance of the cold, he says it never fails. The plan is:

1. Give five grains of sesquicarbonate of ammonia and five minims of liquor morphiæ in an ounce of almond emulsion every three hours.

2. At night give a drachm and one-half of liquor ammoniæ acetatis in a tumber of cold water, after the patient has got into bed and been covered up with several extra blankets.

3. In the morning the extra blankets should be removed so as to allow the skin to cool down before getting up.

4. The patient should get up as usual and take his ordinary diet, but continue the ammonia and morphia mixture every four hours.

5. At bedtime the second night give a colocynth pill. During the treatment the patient should live a little better than usual.

Leonardi on Hydrate of Chloral in Nocturnal Incontinence of Urine.—Dr. G. Leonardi relates three cases of incontinence of urine successfully treated by hydrate of chloral. The first patient was a scrofulous young woman aged twenty-four, who had had enuresis from the age of eighteen. Cod-liver oil with iron, and sulphur baths, had improved her general health; the incontinence, however, continued, but was cured by giving hydrate of chloral in doses of 1 gramme (15 grains) each night for five nights, and afterwards the same quantity on alternate nights. The second patient was a rachitic boy aged seven. Ten centigrammes (1½ grain) of hydrate of chloral were given nightly for five nights. In the third case, a healthy lad aged seventeen, who had had incontinence of urine for eight years, which had resisted all treatment, was cured of his troublesome malady in a few days by hydrate of chloral. The cases are referred to as corroborative of the observations of Dr. William Thomson (*Lancet*, Nov. 19, 1870), and Dr. Bradbury (*British Medical Journal*, April 8, 1871).—*L'Ippocratico, Lond. Medical Record.*

Schiff on the Treatment of Biliary Calculus by Cholinate of Soda.—Dr. M. Schiff says that biliary calculi are generally produced, not in consequence of an excessive formation of cholesterine, but because there is a deficiency of its solvents in the bile—the cholinates and cholates of soda and potash. He suggests the administration of these salts in cases of gall-stone; not to remove the cholesterine already deposited, which he does not think possible, but to hold it in solution and prevent further deposit. It has been proved that bile or a solution of biliary salts, taken into the stomach or intestine, is conveyed to the liver, and that the bile discharged is richer and more dense. He advises that the cholinate of soda should be given in doses of 7½ grains twice a day, until symptoms of disturbance of digestion or of circulation are noticed. Saturation of the system with the medicine is indicated by irregularity of the pulse, which becomes very slow during rest, and is sensibly accelerated by movement of the body or by slight excitement. When this occurs the medicine should not be interrupted, but the dose must be diminished. No good effect is to be expected unless the remedy be continuously administered for some time. —*L'Imparziale*, Feb. 16, *London Medical Record.*

Fluid Extract of Male fern in Tape-Worm.—To secure the successful destruction and expulsion of tape-worm, two points are to be particularly carried out. First, the patient must fast at least twelve hours before taking the remedy; and second, it must be taken in suffi-

cient quantities to kill and expel the entire worm. Frequently it is a matter of good policy to give the patient a cathartic in the night, so as to have the alimentary tract free from fæces as much as possible. Then in the morning, on a fasting stomach, give the male fern in some pleasant combination, as the syrup of acacia or glycerine. From thirty to sixty minims of the fluid extract of male fern must be so combined at each dose, and repeated every two hours, until the stomach rebels against it, the patient keeping very quiet in the meanwhile. No worm can resist this treatment when carried out on the above principles. The fern will move the bowels and expel the entire worm. It is the most reliable remedy for tape-worm, when given in accordance with the above directions. The patient must fast during the time he is taking the remedy, and the bowels must be previously well cleared out.—*Medical Archives.*

The Treatment of Boils.—Dr. J. D. McGaughey, of Wallingford, Conn., in a practical article on Boils in the *Philadelphia Med. Times*, highly recommends sulphate of quinine for their treatment, and says:

I think the best plan to follow in giving quinine is—considering the aborting period to have been passed—to commence as soon as possible and make a firm impression on the system with five-grain doses repeated every four hours until the head rings, keeping the impression up moderately by smaller and oft-repeated doses until the boil has either suppurated or disappeared by resolution. A strict watch should be kept, so that the first pimple may be detected and incised; at the same time five or ten grains of quinine are given daily till all danger is past. No one need think he is going to be successful in circumscribing the trouble if he begins to give quinine just as suppuration is commencing. The great desideratum is to make a thorough impression on the system with the drug, keeping this impression up moderately with smaller and properly regulated doses, *for a considerable length of time*, according to the requirements of each individual case. According to my experience, arsenic—Donovan's solution, preferably—stands next to quinine. In concluding, I hope physicians will give quinine a thorough and judicious trial in furunculi, be they single, multiple, or in successive crops, as I think it is the only remedy that will circumscribe the limits and shorten the duration and prevent successive crops of those pestiferous sores.

The Phenols as Anæsthetic Agents.—According to Dr. Edward R. Squibb, of Brooklyn, New York (*New York Medical Journal*), the best of these is cresol or cresylic acid, and next phenol or the crystallized carbolic acid. But, practically, the cheap mixture of the two, called coal-tar creosote or impure carbolic acid, is as good as

either. The prompt and complete effect of very dilute aqueous solutions of this creosote upon the pain of burns, erysipelas, etc., led him to infer peculiar anæsthetic properties many years ago, and the numbness or insensibility produced upon the hands by handing it confirmed the idea.

Medical Uses of Dugong Oil.—Attention (*British Medical Journal*) has been recalled, by the contents of the Queensland Annexe at the International Exhibition, to the medical uses of dugong oil. It has been declared by more than one medical practitioner, following Dr. Holt, of Brisbane, to possess all the nutritive properties of cod-liver oil, and to be equally useful in all the forms of tuberculous and wasting diseases which are benefited by the administration of cod-liver oil; it is alleged to possess an actually agreeable flavor, to be pleasant as an article of food, and to be acceptable to those whose stomachs reject cod-liver oil. At a recent dinner in the Annexe, the pastry was made with dugong oil, and pronounced to be excellent.

Treatment of Acute Rheumatism by Propylamine and Trymethylamine.—Propylamine was first employed by Awenarius, of St. Petersburg (*Journal de Physique et de Chimie*, 3e serie, t. xxv., 1859), with success in more than 250 more or less complicated cases of acute rheumatism. Upon his recommendation Dr. Gaston (*Medical Press and Circular*, 1872) used this remedy, and asserts that it will produce decided improvement even in severe cases in thirty-six or forty-eight hours. Dr. Gaston, however, employed quinia with propylamine. M. Dujardin-Beaumetz (*L'Union Médicale*, Jan. 16, 1873) reports seven cases, six of acute and one of chronic rheumatism, treated with propylamine alone. Six of these cases recovered between the third and tenth day of treatment. In very acute cases, where the remedy was employed at the commencement of the attack, the results were remarkably rapid. In twenty-four to forty-eight hours, at most, the pain disappears, then the redness and swelling diminish, and at the same time the fever declines; relapses are slight and of short duration. From these few cases (some of which had cardiac disease at the time of their admission into hospital), he is unable to speak of the influence of propylamine on the heart complications. He commences with a dose of 0.5 gramme, increasing to 1 gramme, and even to 1.5 gramme. This dose does not disturb the stomach. Dr. A. Besnier reports six cases of rheumatism treated in this way with decided success.—*Am. Jour. of Med. Sciences.*

Gallic Acid in Hæmoptysis.—Dr. Holden, in the *Medical Record*, recommends a solution of gallic acid, used with the atomizer;

no particular quantity of the acid is adhered to as a formula. He says it is prompt and effectual, soothing to the cough, and arrests the hæmorrhage.

Isnard on the Treatment of Constipation by Arsenic.—Dr. Isnard (*Marseille Médical*, 1872) states that many other physicians besides himself have observed that arsenic excites the appetite and improves the digestion, and facilitates the action of the bowels, but he is not aware that it has been methodically applied for the relief of constipation. Besides (1) improving the appetite, it (2) excites the muscular action of the intestines, and (3) it augments the secretions of the alimentary mucous membrane. It is particularly useful in the constipation of debilitated and anæmic females, sedentary persons, and old people. He administers arsenious acid in the dose of six to ten milligrammes, twice or thrice a day, with food. Sometimes smaller doses suffice. It may be used steadily for some time.—*Phil. Med. Times.*

Treatment of Cancrum Oris.—Of all the local remedies or applications I have resorted to in such cases, I have never found any application so useful or so effectual as hydrochloric acid. Neither nitric acid, nitrate of silver, nor chlorate of potash, nor any other remedy that I have ever tried, except hydrochloric acid, did I ever find of the least use in checking cancrum oris. I have almost never found hydrochloric acid to fail to check the progress of this dreadful disease at once, and bring on a most rapid and healthy action in the part. Nor does it cause so much pain or suffering to the little patient as one would suppose, seeing that the gangrenous spot is almost entirely without feeling at this time. This acid is easily applied to the ulcer by means of a feather or small camel-hair brush. I have cured many cases of cancrum oris by this means.—*Dr. McGreevy*, in *British Med. Journal.*

Turk on the Treatment of Diarrhœa in Children by Acorn-coffee.—Dr. Theodore Türk (*Med.-Chir. Centralblatt*, No. 1, 1873) says that, after considerable experience, he and many of his colleagues have arrived at the conclusion that, in cases of chronic catarrh of the bowels, drugs seldom produce the desired effects. A series of careful observations, however, have shown him that roasted acorns, prepared as coffee, with a few beans of the real article, form the best dietetic and at the same time medicinal remedy. Often when nitrate of silver, tannin, Dover's powder, etc., have proved useless, the simple acorn-coffee (boiled, in cases of specially profuse diarrhœa, with from one to three grains of tannin, and in meteorism or sickness, with the

addition of a piece of orange-peel to the decoction) has, from the first, lessened the stools and improved their quality, and very shortly restored appetite and nutrition. At the same time the children become not fat, but healthy. The acorn-coffee is more efficacious than alkalies, preparations of lime, tonics (Peruvian bark and extract) and carminatives. Moreover, the children drink it readily, without becoming tired, and the painful, formal, and frequent administration of medicine is avoided. —*London Med. Record.*

Quinine as an Oxytoxic.—We have previously mentioned that Monteverdi and others concluded that quinine is a valuable oxytoxic. We find in the *Courier Médical* of the 18th of January, that M. Rancillia, of Caen, a veterinary surgeon, has experimented with quinine, and the result fully corroborates Monteverdi. He administered this agent to several animals for the purpose of exciting premature labor, and in each case it accomplished the purpose with safety to both fœtus and the mother.

It may be appropriate to add here, that MM. Gueneau, de Mussy, and Barthes have for years used quinine in the treatment of metrorrhagia, especially in hæmorrhages which occur several days after delivery and are accompanied by fever with daily exacerbations, and it has often succeeded when ergot and other hæmostatics failed.

It is necessary to give the remedy in doses of eight grains every two hours. It is not often necessary to continue the quinine beyond a single day, but it may be continued for several days as a precaution, though the hæmorrhage should have ceased.

Treatment of Gonorrhœa by Tanno-Glycerine Paste.—Dr. Tomowitz, K.K., Regiments Arzt, Austrian army, reports the successful employment of a modified Schuster's (Aix-la-Chapelle) tanno-glycerine paste for syphilis and gonorrhœa. His formula is as follows:—

℞ Acidi tannici..... ℥ ss.
Opii pulveris..... gr. iv.
Gylcerinæ.....q. s. ut ft. pasta.

Some 50–60 drops glycerine are requisite to bring the paste to a proper consistency. A sound or elastic bougie is dipped into the paste warmed over a stove or spirit-lamp, and thus smeared, is introduced into the orificium penis to the fossa navicularis, where it is held for five minutes. This operation is repeated three times a day. In gleet the catheter or bougie is carried back to the bladder and slowly withdrawn, so as to bring the paste into contact with every surface of

the urethra. Even in acute cases the pain is but very slight.—*Allg. Militar. Zeit.*

Digitalis in the Failing Heart and Delirium of Acute Diseases.—Dr. Little (*Irish Hospital Gazette*, January 15, 1873) recommends the use of digitalis in febrile cases in which stimulants are either not well borne or are contra-indicated, as, for example, in most cases where renal affection is present. He has given it in more than twenty cases, including six of typhus and one of rheumatic fever, the remainder being cases of enteric fever. He usually gives half-drachm doses of the tincture every three or four hours, rarely every hour, and discontinues the medicine when the pulse falls to eighty. Along with the digitalis he gives wine and brandy. In one case of rheumatic fever, where stimulants could not be borne, he used tincture of digitalis alone. After several doses nausea occurred. The tincture was therefore discontinued, and a hypodermic injection, composed of one-eightieth of a grain of atropia, one-fortieth of a grain of digitalin, and one-fourth of a grain of morphia, was substituted. The patient eventually recovered.—*Phila. Med. Times.*

Digitalis an Anaphrodisiac.—M. Gourvat, in the course of a paper published in the *Gazette Médicale de Paris*, on the action of digitalis, says: "When digitalis or digitalin is administered for some time to a man in full possession of sexual powers, these become gradually weakened, the propensities disappear, formation of the liquor seminis diminishes, and may at last cease altogether. The anaphrodisiac properties of the drug are the secret of its good effect in spermatorrhœa."

Therapeutic Uses of Silicate of Soda.—MM. Papillon and Rabuteau recently communicated to the Academy of Sciences, at Paris, a report of their researches on the action of silicate of soda. The therapeutical effects of this salt are especially worthy of notice. They have recently been tested by some of the hospital surgeons here, particularly Dr. Marc See and Dr. Dubreuil, and the results have been very remarkable. Silicate of soda is said by them to be highly efficacious in catarrh of the bladder, where the urine tends to undergo ammoniacal fermentation, in venereal runnings, in specific ulcerations, etc. It acts in dissolving and destroying organic corpuscles, the globules of pus, and all the microscopical parasites which produce corruption. It also seems to exert a certain action on the tissues. In their communication to the Academy the authors draw the attention of the profession to various other therapeutical properties of the salt, but they add that as yet they are not able to assert the perfect harmlessness of silicate of soda taken internally.—*Lancet.*

MATERIA MEDICA.

EUCALYPTS OF AUSTRALIA.

BY CHRISTIAN HOFFMANN.

The Eucalypts are a genus of trees of the natural order Myrtaceæ; they are evergreens, with entire and leathery leaves, which instead of having one surface towards the sky and the other towards the earth, are often placed with their edges in this direction, so that each side is exposed to the light.

This genus, of which at present some one hundred and forty species are known, forms one of the most characteristic features of Australian vegetation, in which it also occupies a very large place, comprising a great number of forest trees, many of them of magnificent proportions. Under favorable conditions of growth, viz., in the sheltered depressions within the Ranges, many varieties attain a colossal size; in more open places, however, they usually occur as middle-sized trees. Amongst the species which embrace trees of gigantic growth may be enumerated: *Eucalyptus amygdalina*, Labillardière—one of the Peppermint-trees; *Eucalyptus goniocalyx*, Ferd. Mueller—one of the White Gum-trees; *Eucalyptus Stuartiana*, Ferd. Mueller—also one of the White Gum-trees; *Eucalyptus obliqua*, L'Heritier, the Stringbark-tree.

A tree of *Eucalyptus amygdalina* in the recesses of Dandenong, measured by Mr. D. Doyle, was found to have attained a height of 420 feet. Mr. G. W. Robinson supposes this Eucalypt, towards the sources of the Yarra, to attain a height of 500 feet. He found the circumference of a tree growing in the back ranges of Berwick to be 81 feet, at the distance of 4 feet from the ground. A Eucalptus on the Black Spur was measured by Mr. G. Klein, and its height found to be 480 feet, consequently exceeding by 40 feet twice the height of the towers of Notre-Dame Cathedral, and overtopping the tallest of the celebrated *Sequoia Wellingtonias*, or Big Tree of California, by 155 feet; as, according to J. D. Whitney, State Geologist, the Sequoia, known by the name of "Keystone State," in the

Calaveras grove, stands at the head of the Big Trees, with an elevation of 325 feet, and this, he adds, is the tallest tree yet measured on this continent, so far as our information goes.

If the size of these Eucalypts is astonishing, not less remarkable is the quantity of timber supported by the soil in the places where they grow. In the State forest at Dandenong (Victoria), it was found by actual measurement that an acre of ground contained twenty large trees of an apparent average height of about 350 feet, and thirty-eight saplings of an apparent average height of about fifty feet; the land being occupied besides with a dense undergrowth. Again, in one of the densest parts of the Mount Macedon State forest, an acre of messmate (*Eucalyptus fissilis*, Ferd. Mueller) forest was found to contain forty-two large standing trees and twelve saplings. Many of the largest of these trees were from six to seven feet in diameter, four feet from the ground, and from 200 to 220 feet high. These measurements were taken by Messrs. Couchman and R. Brough Smyth; the latter gentleman states that in the Mount Juliet Ranges, he found trees of far greater height and standing much closer together than in the Macedon Ranges. The Eucalypts are of very rapid growth, and it is more than probable that the extraordinary dimensions which some of these trees have attained is not so much the result of a very great age, but is rather due to an extreme rapidity of growth. This marvellous quickness of growth, combined with a perfect fitness to resist drought, has rendered many of these trees famed abroad. Baron Von Mueller says: "In Australian vegetation we probably possess the means of obliterating the rainless zones of the globe, to spread at last woods over our deserts, and thereby to mitigate the distressing drought, and to annihilate perhaps even that occasionally dry heat evolved by the sun's rays from the naked ground throughout extensive regions of the interior, and wafted with the current of air to the east and south, miseries from which the prevalence of sea breezes renders the more littoral tracts of West and North Australia almost free." Again: "Even the rugged escarpments of the desolate ranges of Tunis, Algiers, and Morocco might become wooded; even the Sahara itself, if it could not be conquered and rendered habitable, might have the extent of its oases vastly augmented; fertility might be secured again to the Holy Land, and rain to the Asiatic plateau or the desert of Atacama, or timber and fuel be furnished to Natal and La Plata." A great many of these trees are valuable for their timber, their barks, their secretions of gum-resins, and for the essential oils obtained from their leaves, each of which has been treated of, more or less, in detail, under their respective headings, in the following pages.

Before quitting this part of the subject, it may be desirable to speak

in detail of the *Eucalyptus globulus*, for the reason that this is the species which has been introduced into Southern Europe, Algeria, etc., and is therefore better known outside of Australia than any of the other varieties, and has consequently been made the subject of closer investigation. It may here be remarked that the introduction of this and other species of the genus in other countries is mainly due to the exertions of Baron Von Mueller.

The *Eucalyptus globulus*, Labillardiere—the Blue Gum-tree (so called for the peculiar hue of its foliage) of Victoria and Tasmania (but not of New South Wales and West Australia) is restricted to the two former colonies. The *Eucalyptus megacarpa*, Ferd. Mueller, which constitutes the blue gum-tree of Western Australia, rivals that of Victoria and Tasmania in size, but is otherwise very distinct. The blue gum-tree in Victoria often reaches to nearly 300 feet, and to 120 feet without a lateral branch, presenting a most noble object in the landscape. A plank of this wood was imported into England for the Great Exhibition; it measured one hundred feet in length, two feet six inches broad, and three inches in thickness, and sold for more than £100. Its leaves are from four to seven inches long, and one inch in breadth, shining on both surfaces. Like its congeners, this tree is of very rapid growth; the leaves and roots have a very great absorbent power for moisture, thus having a tendency to dry the earth under it, which makes the tree peculiarly suitable for marshy, and in consequence unhealthy districts.

M. Papillon, who has written a memoir upon the *Eucalyptus globulus*, considered from an hygienic, economic, medicinal, and pharmaceutical point of view, gives the following particulars as to pharmaceutical preparations obtained from it. Besides the essence eucalyptol to which the Eucalyptus largely owes its medicinal properties, it contains a solid, resinous, bitter principle, little known as yet, from which the leaves derive their febrifuge qualities.

The following preparations, etc., are at present manufactured from Eucalyptus:

1. The essence, which is administered in doses of a few grms. in the form of globules.

2. Leaf-powder, which contains all the active principles of the plant (essential oil, tannin, bitter principle), and which is prescribed in doses of 4, 8, 12, and even 16 grms. daily.

3. The infusion and decoction of the leaves. With half a leaf, (about 1 grm.) it is possible to aromatize three or four cups, affording a good substitute for tea, employed as a stimulating drink. For topic applications, 8 grms. in decoction, in a litre of water, foms a liquor well charged with the principles indicated.

4. Water distilled from the leaves, which may be advantageously used with stimulating drinks.

5. Aqueous extract, alcoholic extract, employed as febrifuges.

6. Tincture, or alcholate.

7. A liquor which is similar to the liquor of mastic, and a wine which is a tonic and febrifuge.

8. Cigars and cigarettes.

Dr. Gimbert has studied on himself the effects of essence (essential oil) of Eucalyptus when taken into the system. He took various doses of from ten to twenty drops. He found it had a soothing effect. It diminishes the vascular tension, and the sense of comfort arising from it induces sleep. A very strong dose produces a temporary excitement, headache, and a slight fatigue.

Dr. Rabuteau states that the leaves contain no alkaloid. Count Millard de Marafy, from experiments instituted by him, announces that the leaves can be used as a substitute for sumach. The tincture is stated to be an excellent remedy against ague and intermittent fever, especially that kind which is often epidemic in marshy districts, and Spanish physicians have pronounced it efficacious in such cases. Other preparations alluded to in above list possess powerful tonic and diffusible stimulant properties, performing remarkable cures in cases of chronic catarrh and dyspepsia, and some form an excellent antiseptic application to wounds. From this it will be seen that this Eucalypt may become of very great importance in a medicinal point of view, if in no other; and considering their analogy in other respects, it would not be surprising if many other of the species were found to possess equally important properties.

I.—TIMBER OF THE EUCALYPTS.

The timber of the Eucalypts, when green, is generally soft, but when cut into beams, planks, etc., and exposed for a short time to atmospheric influence, becomes very hard, and in consequence difficult to work; this hardening is attributed to the increased density of the woody structure and to the solidification of the gum resin, which is copiously distributed throughout the substance.

This genus furnishes the most important of the native woods employed for economical purposes; and, according to their individual properties, often strongly marked, are well adapted for the various purposes of the shipbuilder, millwright, wheelwright, coachmaker, and carpenter; and many, from the great beauty of the polish which they are capable of receiving, are justly favorites with the cabinet maker.

The timber of *Eucalyptus marginata*, Smith—the Swan River or West Australian mahogany, or mahogany eucalypt (restricted to West-

ern Australia), is worthy of special notice, from the wonderful property it possesses of being absolutely impervious to the inroads of the Limnoria, Teredo, and Chelura; a property which eminently adapts it for the construction of wharves, jetties, and all work of naval architecture exposed to sea-water; it moreover resists the attacks of termites, and on this account is extensively employed in India for railway sleepers.

The timber of *Eucalyptus rostrata*, Schlechtendal—the Red Gum-tree (but not the red gum-tree of Western Australia, which is widely different), possesses the properties ascribed to *Eucalyptus marginata*, almost in an equal degree.

II.—THE BARK OF THE EUCALYPTS.

The bark of some of these trees is remarkable for its hardness, notably so that of the so-called iron-bark tree (*Eucalyptus Leucoxylon*, Ferd. Mueller), which is particularly thick and rugged, and studded with deposits of a dark thick gum-resin: others are thick and bulky, of a lax and what might be termed fibrous texture; this especially holds good with regard to that of the so-called stringy-bark tree (*Eucalyptus obliqua*, L'Heritier), which is removed in large sheets and employed for roofing purposes in the interior, affording a cool and effectual shelter from the sun and rain. The aborigines are very dexterous in the art of separating it from the tree and flattening it for the purpose alluded to. Some species throw off their outer bark in longitudinal strips, which, hanging down from the stems and branches, present a very singular appearance. Amongst a variety of material upon which I experimented with the view of ascertaining their applicability to paper-making, were the barks of a number of species of Eucalypts. From my samples of paper it was inferred that the barks of *Eucalyptus obliqua*, L'Her., *Eucalyptus rostrata*, Schl., *Eucalyptus amygdalina*, Lab., *Eucalyptus globulus*, Lab., *Eucalyptus goniocalyx*, F. M., *Eucalyptus corymbosa*, Sm., *Eucalyptus Leucoxylon*, F. M., *Eucalyptus longifolia*, Link., and *Eucalyptus Stuartiana*, F. M., were all well adapted for the manufacture of packing paper, mill and paste boards; that of the *E. globulus* possibly also for printing paper; and that of the *E. obliqua* also for printing and even for writing paper. From this it may be inferred that they are not unlikely to meet with applications in this branch of industry.

The barks of many of the species are remarkable for their astringent qualities, and, upon examination, were found to contain appreciable quantities of tannin. From my determinations the following have been selected, which may serve to show the probable value of the barks as tanning materials:—

TABLE.—Showing the percentage of Tannic and Gallic acids in the barks of some species of Eucalypts.

Systematic Names.	Vernacular Name.	Locality.	Tannic Acid.	Gallic Acid.
Eucalyptus Stuartiana.	Mountain Ash.	Gippsland.	4.6	0.7
" longfolia.	Woollybutt.	"	8.3	2.8
" corymbosa.	Bloodwood tree.	"	2.7	0.8

III.—GUM-RESINS OF THE EUCALYPTS.

These are produced in greater or lesser quantities by all the species of this genus; from this circumstance the Eucalypts are almost universally called by the colonists "gum-trees."

These substances occur within the trunks of trees of all sizes, in flattened cavities in the otherwise solid wood, which often lie parallel to the rings of growth. In such places the deposition of the gum-resin, which is at first a viscid liquid, becomes gradually inspissated, and subsequently hard and brittle. The liquid gum-resin may be obtained be making incisions in the stems of growing trees; they are very viscid, treacle-like fluids, not differing in chemical composition from those which have undergone indurations, save that they contain more water; the indurated loses from 15 to 20, and the liquid gum-resin about 65 per cent. at a temperature of 212° F. When thus dried they are exceedingly friable and easily pulverized.

In their general characteristics, these gum-resins resemble each other very closely. In the solid form they present the appearance of small angular masses, not unfrequently intermixed with particles of wood. The prevailing color is dark-red brown, in some cases dull, with olive and yellowish tints, in others bright ruby colored and transparent; black and opaque pieces are also very commonly interspersed through each of the varieties described. In the mouth they are tough, adhere to the teeth, and color the saliva red; their taste is intensely astringent, with a slight bitter flavor; in this respect, however, there is some dissimilarity.

The gum-resin from *Eucalyptus resinifera* is that which is known under the name of Botany Bay kino; it is for all medicinal purposes considered equal to kino; that from *Eucalyptus rostrata* is preferred to others as a therapeutic, and as an astringent is particularly administered in Europe and India in cases of chronic diarrhœa. The solvent action of water upon these gum-resins differs according to the species operated on. The aqueous solutions give an acid reaction; in these solutions acetate of lead gives copious gelatinous precipitates; solu-

tion of gelatin causes precipitates, which however do not in any case appear to be so abundant as might have been anticipated from the intense astringent taste of these gum-resins. Ferric salts give precipitates of various shades of green and black; mineral acids produce bulky flocculent deposits.

These bodies, so far as I am aware, have hitherto been but very cursorily examined; they offer an interesting field for chemical investigation.

IV.—ESSENTIAL OILS FROM THE EUCALYPTS.

To Baron von Mueller is due the credit of having been the first to draw attention to this important subject—important, whether regarded from a scientific or industrial point of view, as will be conceded on becoming acquainted with their valuable properties. At his suggestion, Messrs. Bosisto and Johnson entered upon the preparation of the essential oils from a number of species of the genus; in each case determining the yield, etc., etc., the material upon which their experiments were conducted having been supplied by Baron von Mueller, all uncertainty regarding the true botanical name of the trees from which the samples were obtained has been removed. The supply of material from which these oils are prepared is almost unlimited: the plants furnishing it constituting the great bulk of the forest vegetation of the country. Speaking of Victoria alone, the area in that colony occupied by forest trees and scrubs has been estimated at 73,000 square miles, of which 71,500 square miles are occupied by Eucalypts of various species; and wherever these trees are felled for timber (this more especially applies to *Eucalyptus globulus*, the timber of which is always in great demand), the foliage which otherwise is wasted would be available in great abundance for the extraction of the oil.

Mr. Jas. Bosisto, with a praiseworthy spirit of enterprise, entered upon the preparation of these oils on a large scale, with what success (commercially speaking) I am, however, not prepared to state. The similarity in the general properties of these oils is so great that it may suffice to make some general allusions to them here, referring the reader for fuller information to the short descriptive account of each of the various oils given under their respective headings further on. They are all soluble in all proportions in turpentine, both fat and drying oils, benzine, naphtha, ether, chloroform, and absolute alcohol. Spirits of wine dissolves them pretty freely; and water on being agitated with an excess takes up in most instances about 1 per cent. by weight.

Inasmuch as they all possess medicinal properties, they will no doubt ultimately meet with extensive application in medicine.

As solvents for a great variety of resinous substances, they are all

more or less excellent; amongst other resins dissolved by them, is, singular to say, the fossil Kaurie gum (*Dammara Australis*) of New Zealand, a resin, the exportation of which in large quantities has hitherto been retarded in consequence of the difficulty experienced in bringing it into perfect solution. From this it will be seen that these oils are well adapted for the preparation of varnishes and lackers.

For illuminating purposes they are equally valuable. In all cases they burn with a brilliant flame, almost equal, and in some cases even superior, to that from the best American kerosene, whilst the odor, if any, produced by their combustion, is more agreeable, and, unlike it, they leave no stain upon paper or clothing. Notwithstanding that the quantity of oil obtained from each species was determined with considerable accuracy, the results cannot be regarded as absolutely constant under all circumstances; great variations will be perceptible in the producing powers of oil-bearing trees, due to differences in age (experiments proved that a much larger yield was obtained from the more perfectly matured leaf than from those of younger growth), in the localities where grown, whether in high or low, moist or dry ground, in the time of the year when the leaves were gathered, and in climatic influences generally.

The apparatus employed by me, when preparing any of the Eucalyptine oils, was the ordinary still, inside of which was placed a strong wire-net basket, about two or three inches less in diameter than the still, and having legs so as to raise it about an inch from the botttom. By this arrangement the material operated upon was prevented from coming into direct contact with the surface of the still. The leaves having been introduced into the basket, water was poured on, the still adjusted as for an ordinary distillation, and direct heat applied. The oil passes over and condenses with the aqueous vapor, and from the watery portion of the distillate is separated by mechanical means. When steam is at command the above method can, it is needless to say, be greatly improved upon.

As previously stated, the *Eucalyptus globulus* is perhaps the species best known outside Australia, from the fact of its having been introduced into Europe, etc., and has therefore been most handy for investigation. It is consequently the oil from this tree which has received most attention.—*Canada Pharm. Journal.*

ANALYSIS OF THE WATERS OF MASSENA SPRINGS, ST. LAWRENCE CO., NEW YORK.

BY PROF. FERDINAND F. MAYER.

At a temperature of 60° F. the specific gravity is 1.0317; that of water, 1.000.

When taken from the flasks the water is perfectly clear, and exhales a strong odor of sulphuretted hydrogen. After exposure to the air for half a day it shows a faint effervescence, small bubbles continuing for some time to rise to the surface, while a precipitation of sulphur occurs which disappears again after one day, when no more odor of sulphuretted hydrogen is perceptible.

The water has a faintly acid reaction, which becomes stronger on evaporating a large quantity, but nearly disappears on evaporating to dryness.

The solid residue from 1000 parts at 350° F. is 3.38; from one (wine) gallon, 198.679 grains.

The following exhibit shows the composition of the solid and gaseous ingredients:

	A—in one litre. (A)		B—in one gallon. (B)	
Chloride of sodium.....	1.36795	grammes,	79.792	grains.
Chloride of potassium...	0.00871	"	0.508	"
Chloride of magnesium..	0.51308	"	29.927	"
Bromide of magnesium..	0.01155	"	0.673	"
Bicarbonate of lime.	0.08319	"	4.852	"
Bicarbonate of iron.....	0.00838	"	0.488	"
Sulphate of lime.....	1.04116	"	60.931	"
Sulphate of soda.....	0.06003	"	3.501	"
Phosphate of soda.....	0.02263	"	1.320	"
Hyposulphite of soda....	0.07210	"	4.205	"
Sulphide of sodium.....	0.02410	"	1.405	"
Silicate of soda and organic compounds,	0.19160	"	11.176	"
	3.40448		198.678	
Sulphuretted hydrogen { *a*, free,	0.0155	grammes,		22.373, c.c.
{ *b*, half combined,	0.0175	"		

Per gallon, 5.307 cubic inches.

The water in its qualities and composition is said to bear great resemblance to several European sulphur springs, and among them the baths of Eilsen in Germany and Baden in Austria.

THE NEW U. S. PHARMACOPŒIA.

The first improvement which meets the eye relates to the nomenclature of definite chemical compounds. It will be remembered that in 1871 Professor Attfield, of Great Britain, read a paper before the Pharmaceutical Society, in which he advocated the alteration of the names of chemical compounds so as to accord with the more modern views held by the majority of chemists of the present day. A list of the necessary changes was given, and this has formed the basis upon which the compilers of the Pharmacopœia have founded the nomenclature which has been adopted. The old notions regarding the constitution of salts are now well-nigh exploded, and even were this not the case, the old names lack uniformity. Many a tyro in chemistry has puzzled his brains to find out the reason why substances of similar composition should be designated by names having different significations: for instance, why sulphate of soda should be the sulphate of an oxide; and sulphate of iron, which is of similar composition, should be termed the sulphate of a metal. These difficulties will no longer recur under the present system. Thus, nitrate of ammon*ia* becomes nitrate of ammon*ium*; bicarbonate of sod*a*, bicarbonate of sod*ium*, etc. The termination of the Latin name undergoes a corresponding change, as sod*ii* instead of sod*æ*.

The systems of weights and measurement remain as they were, and though it would have been desirable that the metrical system, or even the plan of proportional weights, had been adopted, the committee of revision found that the amount of time at their disposal would not allow of their making changes of such magnitude.

The division of articles of materia medica into *primary* and *secondary* lists is still retained, as also that of the *preparations*. From the *primary* list one article—Ol. Bubulum—has been dismissed; while Gelsemium, Hydrastis, and Ruta have been transferred to it from the *secondary* list; as also Acid. Valerianic and Zinci Valerianas from the former *preparations*. In addition to these, twenty-four new articles have been admitted; these are:

Acidum Carbolicum; Acid. Carbol. Impurum; Acidum Oxalicum; Ammonii Nitras; Calcii Hypophosphis; Cannabis Americana; Cannabis Indica; Cerii Oxalas; Chloral; Cinchona; Conii Fructus; Cuprum; Ferri Hypophosphis; Gossypii Radicis Cortex; Iodoformum; Origanum; Physostigma; Potassii Hypophosphis; Potassii Sulphis; Sodii Bicarb. Venalis; Sodii Hypophosphis; Sodii Hyposulphis; Sodii Nitras; Zinci Oxidum Venale.

From the *secondary* list four articles—Aletris, Angelica, Arum, and Gossypii Radix—have been dismissed, and three articles have

been added, viz.: Asclepias Incarnata, Asclepias Syriaca, and Castanea.

Turning to the *preparations*, we find that seven articles have been omitted; these are Acet. Colchici; Acid. Hydriodic Dilut; Ext. Cannabis Purificat; Ext. Conii Fluid; Ext. Stramonii; Sodæ Valerianas; and Tinct. Aconiti Fol.

A number of the older preparations have been modified in various ways, some of them so as to be almost unrecognizable, while eighty-four new compounds have been added. These may be noticed under the following classification:

Chemical Compounds.—Four salts of Ammonium have been added—the Benzoate, Bromide, purified Chloride, and Iodide. Digitalin has also been officinally recognized, as also Citrate of Iron and Strychnia; Oxalate of Iron; Yellow Oxide of Mercury; Citrate of Lithium; Pyroxylon; Soda and Arseniate of Soda.

Aceta.—Colchici dismissed, Opii modified by the omission of the saffron.

Aquæ.—Acidi Carbolici (two fluid drachms to the pint) and Anisi have been added.

Chartæ.—A new class, containing Cantharides paper, and Charta Sinapis, a substitute for the old-fashioned mustard plaster. While speaking of vesicants, Cantharidal Collodion may be noticed. This is rendered more flexile, and, at the same time, more powerful and speedy in action, by the addition of Castor oil and Canada balsam. The same substances are also added to Collodion for the purpose of rendering it "flexile."

Emplastra.—To these is added a plaster made of alcoholic extract of Aconite root incorporated with Emp. Resinæ.

Extracta.—The extract of stramonium, a preparation which has so often proved of an unreliable character, has been dismissed, as also the *purified* extract of Cannabis, Extracta Cannabis American., Cannabis Indicæ, Physostigmatis and Stramonii seminis have been added.

The term *Alcoholicum*, as applied to extracts, has been discontinued except in those cases where there are two extracts of the same substance, as with belladonna, conium, and hyoscyamus.

Extracta Fluida.—Of this class only one preparation—that of conium—has been dismissed, while the additions have been quite numerous, showing the increased favor with which this convenient form of medicine is regarded. The mode of preparation has also been materially changed, and the use of glycerine substituted for that of sugar, formerly added as a preservative. As far as the experience of the writer goes, this is a step in the right direction, and

we believe will generally be so regarded. The strength of the fluid extracts has been arranged so that sixteen fluid ounces shall equal sixteen ounces of the crude drug—a rule to which there were formerly some exceptions. Any deviation from this rule, on the part of manufacturers, should be strongly discountenanced by pharmacists, and the pharmacopœial requirements zealously guarded. An artful evasion has lately come under the observation of the writer, in which the strength of particular preparations is made dependent on the amount of active ingredient represented by *an infusion* of the crude drug. This is a tacit admission of the uncertain and variable strength of the preparation, and may be held to mean almost anything the manufacturer pleases, as there is no pharmacopœial or officinal statement of the amount of active matter contained in infusions. In very few instances would the strength of such extracts correspond with more than seventy-five per cent. of the crude ingredient; and in some cases—for example, pareira brava—it is probable that simple infusion of that drug would not represent twenty-five per cent. of its real strength.

The additions to this class are Extracta Belladonna Rad.; Calumbæ; Chimaphilæ; Conii fructus; Corni Floridæ; Cubebæ; Digitalis; Erigerontis Canad.; Gelsemii; Geranii; Glycyrrhizæ; Gossypii; Hydrastis; Krameria; Matico; Mezerei; Pareiræ; Rubi; Sabinæ; Scillæ; Senegæ; and Stillingiæ.

Glycerita.—This is a new class in which the solvent is, of course, glycerine, and in which the proportion of active ingredient is, generally, one troy ounce to four fluid ounces. The class embraces Glycerita Acidi Carbolici; Acidi Gallici; Acidi Tannici; Picis Liquidæ and Sodii Boratis.

Linimenta.—Aconiti and Plumbi Subacetatis are the only additions.

Liquores.—The new solutions are Arsenici Chloridi; Sodii Arseniatis; Potassii Permanganatis; Zinci Chloridi; and Ferri Chloridi. The last is almost identical with the British preparation of similar name, and we presume is introduced for the purpose of furnishing an extemporaneous method of making the tincture. Liquor Ammonii Acet. may also be made extemporaneously, and solutions of the requisite strength are provided for the purpose.

Spiritus.—That of Juniper is the only addition; Sp. Chloroformi is slightly modified, and Sp. Ætheris Nit. is materially changed in its manner of preparation.

Succi.—Two preparations—Conii and Taraxaci—similar to those of the British Pharmacopœia are introduced.

Suppositoria.—Convenient formulæ, with ol. theobroma as a vehi-

cle, are introduced. The additions are Acid. Carbolici; Tannici; Aloes; Assafœtidæ; Belladonnæ; Morphiæ; Opii; Plumbi, and Plumbi et Opii.

Tincturæ.—The tincture of Aconite leaves has been dismissed, and those of Orange Peel and Benzoin admitted. Some of the tinctures have been materially altered in strength, and some much modified as to the ingredients. Thus, coloring substances have been generally omitted, as the saffron in Tinct. Aloes et Myrrhæ, and Rhei et Sennæ. As we have before remarked, tincture of iron may be made at once by mixing the liquor with the requisite quantity of spirit.

Unguenta.—The new ointments comprise those of Carbolic acid, Cantharides, Red Iodide of Mercury, Yellow Oxide of Mercury, Mezereon and Iodide of Lead. Simple ointment is now directed to be made with yellow wax, which will materially change the color of other ointments, of which it forms the basis. As neat's-foot oil has been dismissed, Citrine ointment is made altogether of lard.

There are some other alterations and additions, but as we have alluded to those which are most important, we must bring this somewhat extended article to a close.—*Can. Pharm. Jour.*

HYDRASTIS CANADENSIS, OR GOLDEN SEAL, AND ITS ALKALOIDS.

Dr. Van der Espt has recently presented to the Royal Society of Medical and Natural Sciences at Brussels an interesting memoir upon the *Hydrastis Canadensis.* This plant, known also under the name of Golden Seal, is, as its name indicates, a native of Canada, and belongs to the order Ranunculaceæ. It is the rhizome, which is yellow, lactescent when freshly fractured, tortuous, and composed of nodose, fleshy tubercles, furnished with numerous long fibres, that is employed in medicine. Two alkaloids have been found in it: one yellow, berberine; the other white, hydrastine.

Berberine, which is also found in the barberry, calumba root, and elsewhere, appears in the form of small concentrically grouped prisms, or clear yellow silky needles. It is inodorous, but possesses a persistent bitter taste; it is slightly soluble in cold alcohol or distilled water, and perfectly insoluble in ether. With hydrochloric acid it forms a salt which crystallizes in slender yellow needles.

Hydrastine crystallizes in white shining four-sided prisms, which lose their transparence upon desiccation. It is very bitter and pungent, and provokes in the mouth a feeling of numbness which causes it to be employed as a local anæsthetic. Nearly insoluble in water, it

is freely soluble in alcohol, ether, chloroform, and benzine. As the last three do not dissolve berberine, the hydrastine may be easily extracted by treating the powdered root in a displacement apparatus with either of those solvents. The proportion so obtained is about 1½ per cent.

In America neither berberine nor hydrastine is prescribed, but a crystalline substance known under the name of hydrastine, which is said to be a mixture of hydrochlorate of berberine and hydrastine. The purity of this product depends upon its mode of extraction. Among the processes indicated, that of Professor Wayne is the most simple. It consists in the maceration of the powdered root of the golden seal and displacement by cold water. The product is treated with hydrochloric acid, the precipitate separated by filtration and washed, treated with alcohol and left to crystallize.

The hydrastine appears under the form of yellow acicular crystals, without acid or alkaline reaction, and yielding upon trituration a clear yellow powder. It is soluble in boiling alcohol, insoluble in cold alcohol, ether, chloroform, spirits of turpentine, and distilled water; but these various liquids acquire a yellow tint and contain hydrastine.

The rhizome of the golden seal is a bitter tonic analogous to calumba. It is administered in the form of powder, in doses from half a gramme to a gramme and a half. The hydrastine is prescribed in doses of from five to fifty centigrammes. In larger doses these substances act as laxatives, similarly to rhubarb. This latter effect, in the absence of any cathartic or irritant principle, M. Van der Corput thinks would be due to a kind of indigestion, or the stimulation of the mechanical action of the digestive organs under the influence of large doses of the drug. The affections for which it is stated hydrastine may be beneficially employed are those connected closely with atony and increased secretion of the mucous surfaces. A decoction for external use is prepared by boiling thirty parts of the bruised root in five hundred parts of water.—*Ibid.*

THE CHINESE MATERIA MEDICA.

A BELIEF in the specific action of drugs seems to have strongly influenced medical practice in China, as it did but lately that of Europe. Besides, the Chinese believe, as Europeans did in the middle ages, that the appearance of a substance will give a clue to the services it may render to man, *i. e.*, the doctrine of signatures. Thus the luciole is recommended for affections of the visual organs; a madder (*Rubia mungista*), having a red root, is given for amenorrhœa; *Polygonum*

tinctorium, which yields indigo, is reputed efficacious for eruptive fevers: the reniform fruit of the *Kadsura chinensis* is said to possess aphrodisiac properties: while ginseng, with its bifurcated root resembling the legs of a man, is looked upon as restoring virile powers to the sick and aged. Considerations of the same kind are, doubtless, the foundation of the reputation of the *Cordiceps sinensis* as exciting the genital organs; that of the *Bidens parviflora* as infallible in making the nails grow; of the *Vitex incisa* in making the beard grow; and of the *Apocynum juventus* as a rejuvenescent. These are strange illusions, but they merit indulgence from those whose ancestors administered the lungwort to cure phthisis, the gromwell to cure the gravel, and the carrot for the jaundice.

In other points the Chinese show more scientific tendencies. For instance, the astringent substances of the materia medica, whether vegetable (oak galls and Chinese galls, etc.) or mineral (alum, acetate and sulphate of iron, salts of lead, silver, etc.), are used like the bitters as tonics and febrifuges (*Salix babylonica*, *Populus tremula*, *Dichroa febrifuga*) to arrest perspiration, for atonic diarrhœa, and spermatorrhœa. The aromatics, essential oils, and balsams obtained from the Labiatæ, Umbelliferæ, Compositæ, Myristicaceæ and Styracaceæ, garlic, santal, *Daphnidium cubeba*, etc., are used as diffusible stimulants, febrifuges, antispasmodics, and remedies for catarrhs; wormwood and saffron are considered emmenagogues, and the abortive power of the ergots of rice and maize is well known. Mercurial preparations have been employed from time immemorial in Chinese medicine for syphilis; arsenic for strumous and herpetic affections and certain intermittent fevers; iron as a blood restorer. Borax is prescribed for aphthæ; nitrate of soda as a diuretic; carbonate of lime as an absorbent, and an oleo-calcareous liniment for burns. Ancient writers recommended the ashes of seaweed in cases of goitre. Other substances used by them as by Europeans are sulphur, acetate of copper, castor-oil, gamboge, aloes, rhubarb, aconite, veratrum, colchicum, camphor, musk, and opium. They have sternutatories, sialagogues, and anthelmintics analogous to ours. Further, they pretend to possess a number of substances capable of preventing drunkenness (*Betonica officinalis*, *Hovenia dulcis*, *Chrysanthemum album*, nutmeg and borax), and others exercising an influence upon the lactic secretion, either by suspending it (sprouted barley) or increasing it (*Silene? Alisma plantago*).

One thing is very remarkable, that surgical anæsthesia, general and local, has long been used in China. The great surgeon, Houa-To, who advocated hydropathy, used a species of *Atropa* described in the "Pun-Tsaou," which produced an insensibility sufficient to permit him.

to perform important operations upon the abdomen. The *Datura alba* has similar properties. Besides these, the *Azalea procumbens*, which they often associate with andromeda and henbane as a narcotic, produces, when mixed with powdered aconite root, a local anæsthesia which is utilized for small operations.

Chinese medical men have recognized that there is an antagonism between certain substances; that they are incompatible in the same formula, and that they may be used reciprocally as antidotes. Thus, it is recommended to avoid the association of ta-ky (a species of *Carduus*) with *Glycyrrhiza*, *Chamædaphne* and *Helminthocorton;* wasp stings, and the bites of scorpions, and even of venomous serpents, are recommended to be treated by the *Bidens parviflora; Nelumbo* is to be administered to those poisoned by crabs, and the toxic effects of fungi averted by alum or the root of *Cichorium*, and those of aconite by *Libanotis*. An efficacious antidote to arsenic is said to exist in the *Phaseolus angulatus*, which would lead to the supposition that this species, belonging to a harmless genus, possesses exceptionally a pharmaco-dynamic activity comparable to that of the Calabar bean, and superior to that of another Leguminous plant, the *Cytisus Laburnum*, the toxic properties of which are perhaps analogous to those of the exotic *Phaseolus*.

Some of the observations of the Chinese show considerable sagacity, such as the favorable effects of sprouted barley in digestive disorders, the dispersive action exercised by nitre and sal ammoniac upon opacities of the cornea; the immunity from goitre enjoyed by persons drinking water preserved in leaden vessels, a circumstance which appears to point to the preparations of lead as preventive of that disease. Moreover, some of the substances vaunted as remedies in the East probably deserve testing by experiment and clinical observation. Such are the *Anemarrhena asphodeloides* employed for the same purposes as squills; the *Pardanthus chinensis*, to which is attributed various and remarkable properties; the *Pupalia geniculata*, the acrid root of which is a sialagogue, and employed in cases of rheumatism, etc.; the *Passerina Chamædaphne*, a tincture of which is employed as a cordial, tonic, and febrifuge; the *Rehmannia chinensis*, useful in general debility; the *Dimorephanthus edulis*, frequently prescribed for loss of blood, heart disease, etc.; the *Gynocardia odorata*, the seeds of which are extolled for skin disease and syphilis; and the febrifuges, the *Tournefortia argusina*, the *Trichosanthes dioica*, and especially the *Dichroa febrifuga*, the reputation of which is great in Cochin China, and which doubtless has more claims than the others to be looked upon as a substitute for cinchona.—*Etudes sur la Matière Médicale des Chinois.—Canad. Pharm. Journ.*

Indian Wood Oils—Dammer.—This class of resinous oils, known in the Indian bazaars as gurgon oils, is obtained by tapping certain trees of the order Dipterocarpeæ, and applying heat to the incision. The tree is a native of Chittagong, Pegu, Assam, the Valley of Kubba, and the jungles of the Malayan peninsula, and grows to a great height. It is described as having a straight stem, of more than forty feet to the first branch. When not tapped too soon, the base of the trunk is often of a circumference of thirteen feet and upwards. About the end of the dry season, that is in March and April, several deep incisions are made with an axe into the heart of the wood, and a good-sized piece scooped out; in these holes fire is placed, and kept burning until the oil begins to run, when it is received into a bamboo, and allowed to ooze slowly, drop by drop. The average produce is about 40 gallons in each season. The oil which flows from the wound is a mixture of balsam and volatile oil, and when applied as a varnish to wood or other substances, the oil evaporating deposits a hard and durable coat of resin.

These wood oils are chiefly used as natural varnishes, either alone or in combination with colored pigments; also as a substitute for tar in paying the seams of shipping, and preserving timber from the attacks of white ants.

Dammer is the eastern name for a kind of indurated pitch or turpentine exuding spontaneously from various trees indigenous to most of the Indian Islands. The principal species are Dammara Australis (Don), the Kauri tree of New Zealand, and D. orientalis, the pitch tree of Amboyna. The trees yield the dammer in amazing quantity, and generally without the necessity of making incisions. It exudes through the bark, and is either found adherent to the trunk or branches in large lumps, or in masses on the ground under the trees. As these often grow near the seaside, or on the banks of rivers, the dammer is frequently floated away and collected in different places as drift. It is exported in large quantities to Bengal and China, and is used for all purposes to which we apply pitch, but principally in paying the bottom of ships. About 200,000 bundles of dammer are annually exported from Siam.

The fruit of Diospyros embryopteris, a native of the East, is so glutinous as to be used in Bengal for paying boats. A cheap and ready substitute for tar, for preserving cordage, etc., might easily be found in some of the numerous resins and gum-elastics of India.—*Drug. Circ.*

GLYCERINE.

BY ALFRED HENRY MASON.

GLYCERINE ($C_3H_8O_3$) was discovered by Scheele in 1779, who obtained it in the preparation of lead plaster. He named it "sweet principle of oils," from its sweet taste. Subsequently its properties were more accurately studied by Chevereux, in his classical investigations on the chemical history of bodies of fatty origin, and by Perlouze.

Most of the fats and oils of the animal and vegetable kingdoms have a constitution analogous to that of the compound ethers—acetic ether, for example. When acetic ether is treated with alkalies, it assimilates the elements of water, forming an alkaline acetate, and alcohol oils and fats in like manner undergo, by the same treatment, a similar change. They assimilate the elements of water, glycerine is set free, and a salt of the acid, previously in combination with glycerine, is formed.

A compound ether = acid + alcohol—water.
A glycerine salt = acid + glycerine—water.

On this decomposition the methods of preparing glycerine are based.

Glycerine, as a triatomic alcohol

$$\left.\begin{matrix}C_3H_5\\H_3\end{matrix}\right\}O_3, \text{ or } C_3H_5\left\{\begin{matrix}OH\\OH\\OH\end{matrix}\right)$$

is present in the shape of glycerides, in combination with solid and fluid fatty acids, to an amount of eight to nine per cent., and may be separated by treatment with bases potash, soda, lime, baryta, oxide of lead, or with acids (sulphuric acid), and certain chlorides (chloride of zinc); also by means of superheated steam, or very hot water, without the formation of steam, in closed vessels. Glycerine is also formed as a constant product by the alcoholic fermentation of dextrose, levulose, and lactose. According to Pasteur's researches, the quantity of glycerine thus formed amounts to about three per cent. of the weight of the sugar.

Glycerine may be manufactured: (1.) By saponifying oils with oxide of lead; *sic*, five parts of finely triturated litharge are treated with nine parts of olive oil, or any other glyceride, and a small quantity of water, the mixture being constantly stirred, and the water removed, until the oxide of lead is converted into a plaster (Emplastrum Plumbi BPh.).

$$3PbO + 3H_2O + 2(C_3H_5 3C_{18}H_{33}O_2) = 3(Pb2C_{18}H_{33}O_2) + 2(C_3H_5 3HO)$$

Oxide of lead — water — Oleate of glyceryl (Olive oil, or Oleine) — Oleate of lead (Lead plaster) — Hydrate of glyceryl (Glycerine).

Insoluble lead salts in this case, the oleate and stearite of lead, are formed; warm water is then added, and the aqueous liquid decanted, filtered, and sulphuretted hydrogen passed through the filtrate, in order to precipitate a small quantity of plumbous oxide, which dissolves.

The liquid is then digested with animal charcoal, and evaporated *in vacuo*, or over a water-bath, until of the required specific gravity.

(2.) From the alkaline mother-liquor of the soap-works (from which the soap has been separated by means of common salt) by neutralizing with sulphuric acid, removing the excess of that acid by carbonate of barium, evaporating the filtrate to a syrup, digesting it for several days with alcohol, separating the alcoholic liquid from the sulphate of sodium which crystallizes out, decolorizing with animal charcoal, again evaporating to a syrup, exhausting the residue with strong alcohol, and finally evaporating the filtered solution over the water-bath.

This process is, however, too troublesome and expensive for use on the large scale; besides, it is found that by adding great excess of alkali the glycerine is taken up, and the soap produced is found to absorb and hold a much larger percentage of water, a desideratum to the manufacturer of cheap soaps.

(3.) From the residue of the manufacture of stearic acid for candles by lime saponification, when this process is used, the glycerine remains dissolved in the water after the separation of the insoluble lime soap. The lime also dissolved having been eliminated by either sulphuric acid, or, preferably, oxalic acid, the evaporation of the liquid to the consistency of a syrup will yield a glycerine pure enough for many technical purposes. This method, when properly carried out, yields a very pure product, and is the one principally used by continental manufacturers; but it is somewhat complicated, and unless great attention is paid to every part of it, small quantities of lime are apt to remain in the glycerine, rendering it unfit for many purposes, especially for use in medicine and pharmacy.

(4.) By decomposing, or, rather, dissociating neutral fats by means of water, or of superheated steam, this is the best and only unobjectionable method of obtaining glycerine, and is the process brought to a successful issue by Mr. W. F. Wilson, F.R.S. It consists in injecting superheated steam, at a temperature of between 500° and 600° into heated fat. The fats assimilate the elements of water, and are decomposed into their constituents, the fatty acids (oleaic, stearic, or palmitic, as the case may be) and glycerine. Both distil over, and form in the recipient two layers of liquid, of which the lower is tolerably pure aqueous glycerine. Supposing palmatine to have been the material employed—

$$C_3H_53C_{16}H_{31}O_2 + 3HNO = C_3H_53HO + 3HC_{16}H_{31}O_2$$
Palmatine. Water. Glycerine. Palmitic acid.

First we get a weak solution of glycerine, containing from twenty to thirty per cent., then by concentration rough glycerine. Brown glycerine is the product of a first distillation; pale glycerine, white glycerine, produced by further distillation, show the successive stages of advance to pure glycerine.

Properties.—Pure glycerine is a colorless, viscous, neutral, inodorous liquid, with a sweet taste, whence it derives its name, *ψυκός*—sweet. Concentrated as far as possible *in vacuo* over sulphuric acid, it has the sp. gr. 1.28 at 59° (15.0 C.). The glycerine of the British Pharmacopœia has the sp. gr. 1.25, and contains five per cent. of water. Glycerine is difficultly volatile and only begins to distil unchanged at 518° Fahr. in a current of superheated steam, or in a partial vacuum; but it cannot be distilled in the ordinary way without much decomposition, intensely irritating vapors of acrolein being evolved. The vapor of glycerine is inflammable. Glycerine is uncrystallizable, at 40° Fahr. it becomes gummy and almost solid. It is mixable with water and alcohol in all proportions, and is a powerful solvent.* Glycerine is insoluble in ether, chloroform, etc. It does not evaporate, but on the other hand is hygroscopic, attracting moisture from the atmosphere and becoming more limpid; like sugar it possesses strong antiseptic powers. By gradually adding glycerine to a mixture of sulphuric and fuming nitric acids carefully cooled, glonoin $C_3H_5N_3O_9$ (nitro glycerine) is prepared. On adding water to the solution nitro-glycerine is precipitated as a heavy yellowish oil, soluble in alcohol and ether. It is a very unstable compound, and explodes when struck violently; it is largely used for various purposes, the preparation of dualine and dynamite, etc.

Glycerine treated with iodide of phosphorus, whereby iodide of allyl. is formed on being dissolved in alcohol and distilled with sulpho cyanide of potassium, yields sylphocyan-allyl., or artificial oil of mustard.

$$C_3H_5I + KNCS = KI + (C_3H_5)N(CS).$$
Mustard oil.

or if sulphide of potass is substituted, sulphide of allyl. $(C_3H_5)_2S$) essential oil of garlic is yielded.

* An interesting table of the solubility of various salts in glycerine, by Klever, will be found in the Year Book of Pharmacy, 1870, page 166.

THE PANCREATIC JUICE.

The increasing employment of the pancreatic juice in pharmacy renders any process for its preparation valuable, especially when such process is within the reach of practitioners in even the most remote country districts. Dr. Merkel, of Nuremberg, has given the following directions for preparing the pancreatic fluid:—The pancreas of a bullock is finely minced and rubbed up with 250 grammes (about 8 ounces) of glycerine. When used as a nutritive enema, one-third of this is thoroughly mixed with from 120 to 150 grammes (a gramme is 15.5 grs.) of finely minced meat, and immediately injected into the rectum. This is said to be readily digested by the intestines. If the mixture is allowed to stand too long before using, the meat swells up and renders the injecting difficult.

For feeding by the mouth in the treatment of the wasting diseases, both of children and of adults, we would suggest that a very satisfactory pancreatic fluid can be prepared as follows. The pancreas of either the bullock or pig may be used:—

A pound of fresh pancreas is finely minced, and an equal quantity of glycerine added at about 120° Fahrenheit. The mixture is put in a vessel, when the pancreas can be crushed and intimately mixed with the glycerine, and kept at this temperature in a water-bath for twenty-four hours, being occasionally stirred. The glycerine is then carefully drained off, as completely as possible, and the pancreatic magma is carefully washed with about six or eight ounces of water, so as to extract the remainder of the glycerine. This is also carefully drawn off and filtered, and evaporated to one-half, and then mixed with the first glycerine.

This makes a perfect and very agreeable emulsion with cod-liver oil or any other form of fat. Cod-liver oil mixed with this, in the proportion of one part to ten, gives a fine and palatable emulsion, very easy of digestion.

Cod-liver oil, it is said, may also be successfully emulsified by adding to it crushed bits of pancreas, and keeping it at a temperature of 140° Fahrenheit for six hours; thus emulsified, it rapidly passes into the circulation from the stomach.

It is well-known that nearly all the cases of wasting disease die from pure inanition and complete defection and incapacity of appropriation and nutrition. Very many of these cases will recover if we can but present material to the assimilating organs readily prepared for absorption. By this means new impulses of force are acquired, by the entrances of those materials into the chemico-vital actions common to organic bodies.

By mixing one or two teaspoonfuls of this glycerine extract with a half-pint of milk, thickened with a mixture of three parts wheat flour and one part pure malt flour, we have a pure and perfectly assimilable diet for all such cases, on which they thrive remarkably.

The cod-liver oil emulcified by this pancreatic extract forms the basis of a most successful treatment in all wasting diseases, under which eighty per cent. will recover.—*Medical Archives.*

THE MANUFACTURE OF PEPSIN.

BY R. ROTHER.

With the important discovery of Mr. Scheffer, of Louisville, Ky., a new era was developed in the manufacturing interests of pepsin. The multitude of uncertain and mostly worthless preparations, erroneously called pepsin, has been swept from the market by the bona-fide article, which alone merits the title, and is in truth the coveted desideratum, pepsin. This real, active, definite, and always reliable pepsin is most abundantly, easily and expeditiously obtained by the famous process of Mr. Scheffer, which consists in precipitating it from its acidulated aqueous solution by saturation with chloride of sodium.

The history of pepsin will record an entire revolution through the agency of this simple method. The commercial interest will suffer a thorough change, as henceforth the exorbitant price of a comparatively worthless substance will be reduced to a very moderate rate, and a very superior article will be obtained.

In the preparation of this substance, the pharmacist ordinarily imagines an exceedingly unpleasant operation.

But the sooner he disabuses his mind of this nauseous idea, the greater will be the advantage to him. The process, however, is mere pastime, when compared to many less dreaded duties that are comprised in the routine of pharmacy.

Pigs' stomachs are the best sources of pepsin, and the yield of this peculiar principle, exerting such a vast digestive power, is comparatively enormous, if the proper means are employed to secure it. The first consideration which requires attention is, that the stomachs must be fresh. The contents are then immediately removed, and the stomachs well cleaned by a judicious use of fresh water, so as not to waste the mucous membrane in which the digestive principle seems to reside. The second step consists in cutting them into moderately thin shreds by means of scissors. This done, they are macerated for two days in a large volume of acidulated water—the more the better. However, one gallon of water, acidulated with half an ounce of muriatic acid,

is ample for one stomach. At the end of this time the acid liquor is poured off, and the stomachs are again macerated for two days with a similar quantity of acidulated water. This operation of macerating the stomachs can be performed three times with advantage, and even a fourth maceration will repay the effort. The liquids obtained from each maceration are immediately treated with about one-fourth their weight of common salt, and the precipitated pepsin, which accumulates in curdy flakes upon the surface of the liquid, is skimmed off with a ladle, collected on a muslin strainer and strongly pressed, to separate the most of the adhering water. The cake of still moist pepsin is then mixed with a weighed quantity of milk sugar, the mixture spread out to dry, then weighed, and sufficient milk sugar added to make the final weight of the mixture equal to ten times the weight of the real pepsin contained in it, which is determined from the difference between the weight of the dried residue and the known quantity of milk sugar at first added. A source of error may, however, occur here, and the finished preparation be under strength, if the presence of a siderable quantity of chloride of sodium is not taken into account. The moist pepsin, after pressing, still retains over three times its weight of water, which can only be separated by evaporation, and as this water contains at least one-fourth of its weight of salt, the amount of this will perhaps equal half the weight of real pepsin present.

Therefore, the strength of the dried residue is best determined by means of an assay, and its final strength adjusted with the addition of milk sugar, so that ten grains of it shall at least dissolve 120 grains of coagulated albumen. In an extensive practice, with the necessary experience, this is not absolutely necessary, because the concentrated brine adhering to the pepsin can, in a great measure, be replaced by a much weaker saline solution, and afterwards pressed and dried. Most of the salty liquid can also be easily removed, by spreading the pressed pepsin upon abundant folds of bibulous paper, and allowing the liquid to be absorbed, and when quite dry mixing with the necessary amount of sugar of milk. Cold weather is the only proper season in which to undertake the manufacture of pepsin, as putrefied material is not at all serviceable, and in warm weather it is nearly impossible to prevent rapid decomposition.

It will amply pay any pharmacist to make his own pepsin, if he has a sufficient demand for it, because the process is so simple and inexpensive, and the yield so plenty. The product in saccharated pepsin, procured from six stomachs, by means of four macerations, is as follows:—First maceration, 16 ounces; second maceration, 12½ ounces; third maceration, 8 ounces; fourth maceration, 4 ounces; total, 40½ ounces. The average yield of six stomachs by two macerations is 20

ounces, and where raw material is abundant, only two macerations are usually performed, since it is difficult ordinarily to continue the process unaccompanied by putrefactive tendency. Thus it will be seen that, aside from labor, very little outlay is incurred; that the remuneration for extracting pepsin from six stomachs is $20, at the regular wholesale rates.

Several attempts were made to place pepsin in a concentrated liquid form, having the same strength as the saccharated. For this purpose the moist pepsin, with adhering salt, was dried and then mixed with sufficient muriatic acid and glycerine to make the liquid weigh ten times as much as the pepsin employed. This did not give satisfactory results. The moist pepsin was then treated at once with acid and glycerine, without being first dried, the strength being adjusted from the data of the usual loss in water that moist pepsin sustains. This mixture, after long standing, did not form a clear solution; it filtered slowly and with great difficulty, and the remarkable fact was ascertained that the filtrate would not dissolve coagulated albumen. But the unfiltered liquid showed an undiminished activity when diluted and tested with albumen. Through this result it was found that if the liquid, be it acidulated water or glycerine, is increased to forty times the weight of the pepsin, a perfect solution can be made, which possesses the required activity, only it is but one-fourth as strong as the saccharated powder. No trial was made whether a pepsin freer from salt would make a more concentrated and perfect solution. But even this weaker solution, containing 2½ per cent. of real pepsin — equal to 25 per cent. of the saccharated—is perfectly stable, and for the purpose of making more dilute solutions of pepsin, it is far preferable to the powdered.

An interesting fact connected with the pepsin question has just been ascertained by the writer. It is the villanous imposition perpetrated by a wilful charlatan, in a rascally enterprise of forcing his fraudulent concoctions upon the market. A preparation known as "Houghton's Pulverized Pepsin" has caused much comment by its very marked bitter taste, and Mr. A. E. Ebert, of Chicago, expressed his opinion at the meeting of the American Pharmaceutical Association, held at Baltimore, Md., that the bitterness was due to strychnine, stating, however, that he did not succeed in proving its presence.

If the bichromate of potash and sulphuric acid test, which is so extremely delicate for pure strychnine, is applied to a mixture of strychnine containing sugar, the reaction is prevented or obscured by the reduction of the chromic acid to the sesquioxide state. But if the mixture contains uncombined strychnine, chloroform will extract it—though not if the strychnine exists in the condition of a salt. The sus-

pected pepsin was therefore treated with a few drops of ammonia, and then with chloroform, the mixture poured upon a filter, the filtrate evaporated, and the residue tested with sulphuric acid and bichromate of potash; the beautiful violet color was instantly and profusely manifested, thus giving indubitable evidence of the presence of strychnine. The vicious combination purporting to be pepsin, therefore, owes its activity, such as it is, solely to a most virulent poison—strychnine! The inference of Mr. Ebert was therefore correct, that Houghton's pepsin owes its bitterness to the presence of strychnine.—*Chicago Pharmacist.*

EMULSIONS.

BY HERBERT G. ROGERSON.

THE appearance in a recent number of this journal of a paper bearing the above title, transcribed from the *New York Druggists' Circular*, leads me to offer a remark or two on the same subject.

The paper referred to was mainly devoted to a consideration of the merits of a combination of gum acacia and glycerine, in the preparation of emulsions of various kinds. Believing, however, that gum tragacanth affords us a mucilage which, when prepared under certain conditions, is capable of giving results in every respect superior to any producible by the combination recommended in the paper, I propose briefly to outline its more advantageous applications, and extremely convenient method of preparation. In doing this I am led to recur to a formula sent by me to this journal some three years ago, and published under the title of "Cod Liver Oil Cream," which may be taken as a type of this class of emulsions; and the fact of the extensive and successful adoption of that formula having come to my knowledge, emboldens me to reproduce it in a slightly modified and improved form.

Before doing so, however, I may state it as a *sine quâ non*, that the tragacanth employed for this and allied preparations should be of exceptionally fine quality. It should possess a pretty uniform whiteness, and freedom from dark patches and specks, or if these latter be present they should be broken off and rejected. The selected pieces are then cut up into fragments about one quarter of an inch square, and immersed in soft or distilled water for 48 or more hours in the proportion of about 2½ oz. to the gallon, stirring at intervals to prevent agglomeration. The addition afterwards of a small percentage of glycerine insures almost indefinite keeping qualities. To avoid disappointment and secure the best results, it will be well not to rely on

any ordinary sample of the gum, but to apply to one's wholesale house for a small parcel of exceptional quality. In this way we succeeded in obtaining a sample almost free from blemish, and requiring no material weeding; while but for this precaution one might improve but slightly on the pharmacopœial mucil. tragac., a dark and muddy product.

The formula referred to above, as amended, runs thus:

℞

First shake together.

Ol. jecor. aselli	℥ v.
Ess. limon	
" amygd. (1 in 16) aa	♏ xxiv.
Spts. vini rect.	℥ iss.
Syrup	℥ ss.
Mucil. tragac. (prepared as above) ad	℥ xvi.

The mere act of shaking together these ingredients for an instant or two suffices to unite them into an elegant semi-transparent and permanent emulsion, with attractive custard-like flavor that can scarcely fail to commend itself to the votaries of "Elegant Pharmacy."

Other oils, as castor, almond, turpentine, etc., or balsams may be substituted for the one above specified. The proportion there given may be held to be only *relative*, the precise quantity of any oil, "emulsifiable" by a given quantity of mucilage depending directly upon the degree of viscosity of the latter. If it be desired to combine an oil in much larger proportion than appears in the formula given, this may be effected to an almost incredible extent by substituting brisk stirring in a mortar during the adding of an oil, for the mere agitation that sufficed in the former case. It is probable that a great variety of substances upon which I have not yet experimented may be treated advantageously as above.

My experience has been mainly with the oils of castor, cod-liver, olive, and turpentine, and the success attending the use of these was perfect, none of them showing any disposition to separate after many months' keeping, and retaining then a degree of sweetness and freshness that proved keeping qualities of a very perfect order.—*Phar. Jour. and Transactions.*

Morocco Drugs.—The *British Med. Journal*, Feb. 8, 1873, reports that, at a recent meeting of the Pharmaceutical Society of Great Britain, Dr. Arthur Leared gave some interesting information respecting drugs collected in Morocco during a recent visit to that country. Although the Science of Medicine owes much to the Arab race, which is well represented in Morocco, Dr. Leared found the difficulties besetting an inquirer to be very great, in consequence of the ignorance

and fanaticism of those who now practise the strange jumble of astrology and pharmacy which there passes for the healing art. The vegetable products of Morocco, Dr. Leared states, are those of a subtropical country, in which there is great variety as regards the nature of the soil, elevation above the sea-level, and irrigation, great diversity of climate and soil being sometimes experienced within narrow limits. One circumstance that struck him forcibly was the peculiar sporadic distribution of plants, since it almost seemed as if they, like the people of the country, were possessed of exclusive tendencies which prevented one kind from mixing with another. As might be expected, many of the drugs proved to be old friends with new names, among which may be mentioned caraway, anise and fennel seed, ammoniacum and euphorbium gums, rue, cassia, Indian hemp, castor and croton oils, orris root, ambergris, etc. A certain amount of interest attaches to the identification of our own remedies among the Moors, and Dr. Leared is not without hope that some addition to our materia medica may result from the present inquiry. Out of about sixty articles mentioned, he reckons that one-half are well known and commonly used by ourselves, or else derived from botanical sources so closely allied as to be practically the same. About one-fourth are known to, but not used by us; and the remainder are derived from plants not at all in use here, or not yet identified. One point worthy of notice is that, while a great number of natural orders are represented, there is a great preponderance of the labiate order.

Pomade of Castor-oil and Glycerine.—Take of

White wax	1½ ounce.
Glycerine	2 drachms.
Castor-oil	12 ounces.
Essence of lemon	5 drachms.
Essence of lavender	1 drachm.
Essence of bergamot	2 drachms.
Oil of cloves	10 drops.
Annatto	10 grains.
Alcohol,	
Water, distilled, of each	q. s.

Dissolve the wax with moderate heat in a little of the castor-oil, and triturate with the remainder of the oil and the glycerine until it is cool; then add the essences and the volatile oil. Finally, rub the annatto with a drachm of water until it is thoroughly suspended, add a drachm of alcohol, and stir the coloring matter into the pomade until it is intimately incorporated.

Phosphorus Pills.—Dr. Radcliffe suggests (*Pharmaceutical Journal*) the following formula:—Take of phosphorus, 6 grs.; suet, 600 grs.: melt the suet in a stopped bottle, capable of holding twice the quantity indicated; put in the phosphorus, and when liquid, agitate the mixture until it becomes solid; roll into 3-grain pills, and cover with gelatine. Each pill will contain one thirty-third part of a grain of phosphorus.

Robur.—This new form of spirit originated from the practical observation of a well-known traveller that, by combining a preparation of theine with spirit, he obtained a beverage which was eminently stimulant and restorative after a hard day's work. From what is known of the action of the active principle of tea and the equally known effects of alcohol, this is thoroughly intelligible; and the idea of the combination of the nervine tonic—which, in the form of tea, coffee, cocoa, or matè, is the beverage of the whole civilized world—with alcohol, selected by an equally strong and universal instinct, may be considered to be a very happy one. Both have the prescriptive claim to confidence derived from the argument *quod ubique quod ab omnibus*. That it is at once a stimulant, a nervine tonic, and an aid to weak digestion, follows from its composition, and these effects have been verified in practice. The main practical problem was to render it entirely palatable while maintaining its purity. This has been satisfactorily accomplished, and a hot toddy of robur is one of the most palatable of alcoholic drinks. In the treatment of exhaustive diseases, wherever spirit is now employed, robur is, we think, called to render great services, and deserves a very ample trial. As an alcoholic beverage, its qualities speak for themselves. It is, we fully believe, more wholesome and far less liable to abuse than other of the customary forms of spirit.—*London Medical Record.*

Syrupus Cubebæ.—A correspondent of the *Journal of Pharmacy* gives the following directions for preparing a syrup of cubebs which has been found an elegant as well as efficacious remedy in diseases of the throat and lungs:—

℞	Fluid ext. cubebs	f. ℥ ij.
	Carb. magnesia	f. ℥ ss.
	Sugar, powdered	℥ xij.
	Orange-flower water	f. ℥ ij.
	Water	q. s.
	Ess. oil almonds	gtt. j.

Rub up the fluid extract with the carb. magnesia, and then add ℥ ij. of the sugar in small portions. When thoroughly mixed, add

gradually first the orange-flower water, and then f. ʒ vij. water, constantly triturating the mixture until the sugar is dissolved. Filter, and add q. s. water through the filter to measure f. ʒ xj., in which dissolve the balance of the sugar without heat. Add the oil of almonds, put in a little alcohol, and again filter, adding, if necessary, q. s. water through the filter to measure one pint. The dose of this syrup is f. ʒ j.–iv., and it may be given in even larger doses if required. —*Phila. Med. and Surg. Reporter.*

Sulphovinate of Quinia.—At a meeting of the Société de Thérapeutique, in January last, reported in the *Phar. Jour. and Trans.*, M. Limousin called attention to specimens of this salt prepared by various methods. By decomposing sulphate of quinia with sulphovinate of barium, the salt was obtained in the form of scales. A better process is that in which an alcoholic solution of sulphate of quinine is treated by similar solution of sulphovinate of sodium. In the latter case, the product may be obtained perfectly white and well crystallized, and has the advantage over that of the first method of not being contaminated by poisonous salts of barium. The sulphovinate is the most soluble salt of quinine, even deliquescing in a moist atmosphere. Its principal application would appear to be for hypodermic injection, as the use of an acid, indispensable in preparing solutions of other quinine salts is not necessary.—*Canadian Pharm. Journal.*

Lead in Syrup of Iodide of Iron.—At a recent meeting of the Pharmaceutical Society, Professor Attfield showed a sample of syrup ferri iodidi, containing a number of golden crystals of iodide of lead. Dr. Attfield said lead was often to be found in company with iron filings, but in this case iron wire had been used. Mr. Williams mentioned that he had himself found iodide of lead in this syrup, and had traced it to the iron. Mr. Umney had found the same impurity, but only when crude iodine had been employed. Re-sublimed iodine should always be used.

Saint-Martin on the Composition of Santonin.—M. L. de Saint-Martin (*Comptes Rendus*, lxxv. and *Pharmac. Journ. and Trans.*, Dec. 28, 1872) has found that in all probability Berthelot was right in classing santonin among the phenols. If santonin be a phenol, its formula ($C_{15}H_{18}O_3$) indicates that it should be possible to obtain from it: (1) A diatomic phenol ($C_{15}H_{16}O_2$); (2) A monatomic phenol ($C_{15}H_{18}O$); and (3) A carbide of hydrogen ($C_{15}H_{18}$), which would have the composition of a homologue of naphthalin isomeric or identical with amyl-naphthalin. The author has succeeded in obtaining the

monatomic phenol from santonin, and hopes to obtain shortly the other terms of the series.

The Active Principles of Opium.—Monsieur Rabuteau, at a meeting of the French Academy, in April last, read a paper "On the Active Principles of Opium." He states that all, *Morphine*, *Codeine*, *Thebaine*, *Papaverine*, *Narceine*, and *Narcotine* are toxic, and with the exception of *Narceine*, produce convulsions when given in large doses. That morphine, narceine, and codeine, are all soporific, and the two former alone restrain the action of the bowels or the urinary secretions. All act as analgesics when used subcutaneously in neuralgia. In May, Monsieur Bouchut read a paper on the same subject, in which he looks on morphia and codeia as the only alkaloids of therapeutic value, the latter being about one-third as strong as morphia.

Homolle on Digitaline in its Chemical, Toxicological, and Medico-Legal Relations.—M. Homolle (*L'Union Médicale*) sums up thus the results of this research.—1. The most direct process for obtaining crystallized digitaline consists in agitating with chloroform the product of the maceration of digitalis. The product of the evaporation of the chloroform (*chloroformic digitaline*), washed successively with benzine, pure ether and weak alcohol (44° *centesim.*), then taken up by alcohol at 95° *centesim.*, and filtered through charcoal, gives at once crystallized digitaline. 2. Digitaline obtained from the tannate (the digitaline of the French codex) will also yield crystallized digitaline; but it is difficult to obtain it so white. 3. Crystallized digitaline does not differ notably from chloroformic digitaline, in respect to its chemical characters or physiological and toxicological properties. 4. Digitaline is neither a glucoside nor an alkaloid. 5. Digitaline presents only one really specific chemical reaction, green coloration by hydrochloric acid. 6. No lesions characteristic of poisoning by digitalis are yet known in man and mammals. 7. The symptoms to which poisoning by digitalis gives rise, only furnish a presumption that poisoning has occurred from digitalis and its derivatives. 8. The toxic effects produced by digitaline in the frog constitute a true physiological reaction which, corroborating the chemical tests, allows us to affirm that the poison employed was digitalis. 9. In medico-legal cases of poisoning, digitaline may be isolated from the vomited matters, or from those found in the stomach of the subject. 10. Chemical tests ought always to be supplemented by experiment on the frog (Marshall Hall test), when the quantity of the product obtained allows it. 11. The crude alcoholic extracts of the vomited mat-

ters, etc., do not, by reason of their complexity, allow a sufficient degree of precision in the test. 12. Experiments on mammals, besides demanding a much larger amount of the substance, do not in the case of cardiac poisons, and especially of digitalis, afford results so clearly defined and easily observable as those produced in the frog.

Notes on Preparations of Phosphorus.—A good pill, it is said, may be made by dissolving one grain of phosphorus in half a drachm of chloroform, and rubbing it up in a mortar with two scruples of powdered liquorice, and when the chloroform is evaporated adding half a drachm of castile soap, and making into twenty-four pills, or as may be desired.

A very pleasant preparation of phosphorus, in the fluid form, is: Dissolve a grain of phosphorus in six drachms of chloroform, and add two ounces of good glycerine, and shake well. The glycerine forms a permanent union with chloroform, which dilution with water does not separate. Dose, a teaspoonful three times a day.

Hypophosphorous acid has not received that attention its merits entitle it to. As a remedial agent of the phosphorus family it is one of the most reliable. The hypophosphorous acid, in solution, enters the economy, in combination with some of the fatty acids and glycerine combined, and forms a true nerve food and restorative. For children it is of decided advantage. The usual dose is from 10 drops to ʒss., with an equal quantity of glycerine in half to an ounce of some aromatic water.

Pavesi on a Syrup of Phosphate of Lime.– Carlo Pavesi, of Mortara, describes (*L'Indipendente*, Feb. 15) a syrup of phosphate of lime made of 1½ part of subphosphate of lime, 1½ part of bicarbonate of soda, a sufficiency of lemon-juice, 18 parts of saturated decoction of wheaten bran, and 12 parts of refined sugar. The phosphate of lime and decoction of bran are introduced into a strong glass bottle; the bicarbonate of soda is then added, and after it the lemon-juice. The bottle is now tightly closed and shaken gently; this is repeated from time to time for forty-eight hours, so as to leave a slight excess of lemon-juice. The fluid is then filtered through blotting paper: it contains citrate of soda and subphosphate of lime dissolved in the bran decoction, which itself contains phosphates, gluten, etc. The sugar having been added, the fluid is evaporated to the consistence of a thick syrup. The use of this preparation, Pavesi says, is indicated in the following conditions: 1. In suckling children during dentition; it may also be given to the nurses. 2. In children afflicted with osteomalacia, rickets, or scrofula. 3. In women suffering from puerperal cachexia, and in pregnant females. 4. In cases of fracture and of caries of bone. 5. In patients

wasted by suppuration or purulent infection, and especially in tuberculous subjects where cavities have formed in the lungs. 6. In scurvy, and especially in long sea-voyages.

A. Henry, M.D.

Improved Formula for Camphor Water.—

℞	Camphoræ	ʒ iv.
	Magnes. carb	ʒ ij.
	Aquæ destillat	Oiv.
	Alcohol	q. s.

Take just enough alcohol to dissolve the camphor and bring it to a liquid state; while liquid add the magnesia and triturate (during this time the alcohol will evaporate). Then mix the water, as usual, and filter. By making a perfect solution of the camphor, the particles are thoroughly divided, whereas by the U. S. P. process only enough alcohol is added to break up the adhesion of its particles and reduce it to powder, and all must have noticed the numerous small grains of camphor left on the filter by the present process. Camphor water is made by the process I suggest in one-half the time; magnesia is saved by it, and all the camphor directed is taken up in the solution. By the present process it is not. There is no deposit formed on the bottom or sides of the jar by standing.

Mercurial Ointment.—In the *Journal de Pharmacie et de Chimie* there is an article by M. Magnes Lahen, respecting the extinction of mercury by fatty bodies. The conclusion arrived at is that the extinction of the mercury is due to its minute subdivision, so minute that it becomes encased with fatty coatings, which do not readily break. He finds that liquid fatty bodies produce this result more rapidly than solid ones; and he gives the following formula for mercurial ointment and benzoated mercurial ointment, whereby he says they can be made with a great economy of time, and with excellent results:—

Mercurial Ointment.

Mercury	1,000 grammes.
Oil of sweet almonds	20 "
Lard	980 "

The mercury should be well mixed with the oil in a wide shallow vessel, using a broad wooden pestle. In about twelve or fifteen minutes the mercury is reduced to a kind of homogeneous paste, in which scarcely any globules are perceptible. This is to be mixed with not more than 200 grammes of melted lard, until the mercury has completely disappeared. This will occupy less than an hour, and then the ointment may be incorporated with the rest of the lard by rubbing.

Benzoated Mercurial Ointment.

Mercury	1,000	grammes.
Oil of sweet almonds	20	"
Balsam of Peru	20	"
Lard	960	"

The oil of sweet almonds and balsam of Peru are to be mixed, and then rubbed with the mercury. Afterwards the process is similar to that described above. The benzoated ointment is said to be prepared more quickly and with better results than the other.

Syrup of Tar.—Mons. Latour gives the following formula in the *Repertoire de Pharmacie:*—

Tar, washed with boiling water	100	grammes.
White sugar	600	"
Powdered gum Senegal	100	"
Water	400	"
Simple syrup	2,000	"

The tar must be triturated in a porcelain mortar with the sugar and the powdered senegal until a perfect mixture is obtained. Then the mixture should be turned iato an evaporating dish, previously made hot, and the water, with sufficient of the syrup, boiling, added. The mixture is to be continually triturated until a perfect emulsion is obtained, and the rest of the syrup, boiling, is to be added by degrees, having brought the syrup to the boiling-point, and strained while hot.

One part of tar is contained in thirty parts of the syrup. M. Latour adds that a teaspoonful mixed with a tumblerful of bitter water gives a proper draught of tar water, in which the tar flavor is well disguised.

TOXICOLOGY.

POISONING BY CARBOLIC ACID.

The widespread use of carbolic acid, both for therapeutical and disinfecting purposes, has afforded frequent opportunities of observing the powerful toxic effects of this substance; and the literature of the subject, including recorded cases and experimental investigations, is now sufficiently extensive to furnish a tolerably complete account of the symptoms, mode of action, and methods of detecting the poison. Numerous cases are reported in recent medical journals of dangerous and frequently fatal poisoning by carbolic acid, resulting from internal administration by misadventure or with suicidal intent, from cutaneous absorption, and from its employment in enemata, and in lotions in the antiseptic system of surgical dressing. For more or less complete details of the individual cases, the reader may consult the reports in *Schmidt's Jahrbücher*, 1872, No. 10, in *Canstatt's Jahresbericht* for 1871, and in a review by Dr. Méhu in the *Archives Générales de Médecine*, Feb., 1873.

When the poison has been taken internally, the symptoms, apart from the local caustic effects depending on the degree of concentration, have generally been sudden vertigo and intoxication, passing rapidly into unconsciousness, stupor, and collapse, with complete muscular relaxation, loss of sensibility, stertorous respiration, rapid and feeble pulse, great lowering of temperature, and usually, but not always, marked contraction of the pupil. Vomiting is comparatively rare, and convulsions are exceptional. Death has occurred within an hour (Jeffreys and Hainworth) or after sixty hours (Zimm) or longer. After death, the mucous membranes of the mouth, throat, œsophagus, and stomach, have been found to be pale, sodden, corrugated or partially detached, and marked by local patches of hyperæmia or capillary hæmorrhage. Great congestion of the brain and membranes, congestion and œdema of the lungs, and general congestion of the abdominal viscera are likewise seen. The heart has sometimes been found dilated and filled with dark blood, at other times empty and contracted. The blood is usually of a dark color, semi-fluid, or only partially coagulated. The blood, the stomach, the organs generally, and particularly the subarachnoid fluid and cerebral ventricles

(Ogston) exhale the odor of the acid. The odor is also very distinct in the urine, which generally is of a greenish tint.

In most of the recorded cases the acid has been of the ordinary impure commercial variety, containing, along with carbolic acid, xylic and cresylic acids; and the quantities swallowed have been large, varying from half an ounce to two ounces. This is, of course, far beyond the minimum fatal dose; for dangerous symptoms have been caused by the internal administration of six or seven drops of the acid (Fuller and Pinkham). Toxic symptoms have resulted in children from a dose as small as .12 gramme. Absorption by the skin has led to equally fatal and no less rapid results than internal administration.

Three very remarkable cases of this kind have been detailed by Machin (*Brit. Med. Jour.*, Feb., 1868). Three women afflicted with scabies had their skin rubbed with carbolic acid in mistake for sulphur lotion. All three rapidly became unconscious, and two of them died. Hoppe-Seyler (*Pflüger's Archiv für Physiologie*, v. 1872) also relates two similar cases. Two apprentices, suffering from scabies, while rubbing each other on the hands and back with a mixture of carbolic acid, water, and alcohol, of which carbolic acid formed about one-eighth, were, during the process, suddenly seized with giddiness and intoxication, and both fell into a state of stupor. One of them died in this state, while the other ultimately recovered, and remembered nothing except the feeling of tension in the head and giddiness which he experienced at the first. So rapid is the absorption from the skin, that Hoppe-Seyler recommends, as a lecture-experiment, to paint the abdomen of a dog with carbolic acid, after merely shaving off the hair, in order to show the ease with which substances may permeate the unbroken skin, and the connection of nervous symptoms with the entry of poison into the brain.

A case is also mentioned which nearly proved fatal from the injection of a carbolic acid enema for the purpose of killing ascarides. Several instances are on record where dangerous symptoms have arisen from the employment of carbolic acid lotions in the treatment of abscesses and wounds; but it must be admitted that, notwithstanding the activity of carbolic acid as a poison, the free use which is made of it in this country in antiseptic surgery has not caused that fatality or danger which *à priori* one might have been led to expect, or at least, if so, the cases on record are comparatively few. Méhu states that such results are not uncommon in this country, and he attributes them to the fact that we use much more concentrated solutions than they do in France. We are unable to find satisfactory grounds for Méhu's statements, and are inclined to think that the strength of the lotions and

combination with oil may act as a preservative against absorption by their coagulating effect on raw surfaces and the discharges. Wallace, Lightfoot, Tait, etc., in this country, and White, Hall, etc., in America, have, however, shown that serious symptoms, such as vomiting, dyspnœa, and alarming collapse, may occasionally result from the application of carbolic acid solutions to abscesses and wounds. In these cases, and even in cases where the symptoms of poisoning have not manifested themselves to any great extent, the urine has generally been observed to be of a dark brown color and peculiar odor. This color does not depend on altered coloring matter of the blood, as White supposes, but appears to be a product of oxidation of carbolic acid. The color has been sometimes observed during the therapeutical internal administration of carbolic acid, but it occurs much more frequently from its external than from its internal use, and is in all probability due to oxidation previous to absorption.

The action of carbolic acid on the lower animals has been investigated recently by Husemann (*Deutsche Klin*, 1871, 32–46), Salkowski (*Pflüger's Archiv für Physiologie*, v. 1872), and by Hoppe-Seyler (*ibid.*). Their researches have shown that the effect of carbolic acid on the lower animals varies in some respects considerably from its action on man, and as yet no satisfactory explanation of the differences has been advanced.

Husemann finds that in frogs, carbolic acid causes general paresis and paralysis, diminished temperature, and sinking of the respiration and heart's action. Before the paralysis manifests itself, restlessness and hyperæsthesia are observed, but only in exceptional cases do clonic and tonic convulsions occur. In birds and mammals (rabbits, etc.), however, the most characteristic phenomena are the violent clonic convulsions, followed in fatal cases by a state of paralysis and collapse, lowering of temperature, diminished sensibility, dyspnœa, and excess of secretion from the salivary and lachrymal glands. Salkowski, however, has not observed the paralytic stage in rabbits, convulsions being the chief symptom. In man, on the other hand, convulsions as a rule are entirely absent.

Salkowski thinks that carbolic acid, like strychnia, increases the reflex excitability of the spinal cord; and he attributes death by carbolic acid to paralysis of the respiratory centre.

Hoppe Seyler has shown that it greatly lowers the blood-pressure by causing vaso-motor paralysis. This probably is the cause of the lowering of temperature commonly observed.

The diagnosis of carbolic acid poisoning during life is comparatively easy. The state of stupor, combined with the whitish marks of carbolic acid on the mouth and lips, if concentrated, and the smell of the

froth and saliva issuing from the mouth and nostrils, are usually well marked and characteristic. After death, the odor pervading the stomach and organs generally is almost of itself a diagnostic sign. But carbolic acid in small quantity may be detected by appropriate tests in the stomach, liver, kidney, brain, blood, and urine. There are, however, some differences of opinion regarding the significance and value of the various tests proposed.

The rough test of dipping a shaving of wood into carbolic acid, and then into hydrochloric acid, thus obtaining a blue color when the chip is dried in the sun, is not applicable to small quantities.

A more delicate test is the violet, passing into blue, which is caused by the addition of perchloride of iron to the suspected solution. This reaction ceases to be applicable when the carbolic acid is less than 1 in 2100 of the solution. But this test is not specially characteristic of carbolic acid, for perchloride of iron also gives a blue with melilotic and hydrocumaric acids, and a violet with sulphophenic acid (Méhu).

Salkowski recommends, as the best test, the successive action of ammonia and chloride of lime on solutions of carbolic acid; he adds to the liquid one-fourth of its volume of liquor ammoniæ, then a few drops of chloride of lime (1 in 20) and gently warms it, but not to boiling. If much carbolic acid be present, a blue color at once appears, changing to red when the liquid is acidulated. If the carbolic acid be present in small quantity only, the liquid must be allowed to stand for some time. A blue color is produced by a solution of carbolic acid containing 1 in 4000. But by far the most delicate test is the reaction with bromine water, proposed by Landolt (*Deut. Chem. Ges. Ber.*, iv. 750). When an excess of bromine water is added to a very dilute solution of carbolic acid, a whitish yellow flocculent precipitate of tribromophenol is produced. A solution containing only 1 of carbolic acid in 43,700 of water gives the reaction quite distinctly. When the precipitate is collected and treated with sodium-amalgam, carbolic acid is set free in oily drops and may be recognized by its odor.

The carbolic acid may be separated from the contents of the stomach, tissues, etc., in the simplest manner, by distillation with dilute sulphuric acid. Hoppe-Seyler recommends the application of Landolt's test to the distillate as the most satisfactory in these cases. He has been able to separate and determine quantitatively in this manner the amount in the kidneys, brain, blood, and liver of animals poisoned with carbolic acid. The greatest quantity was found in the kidneys, next in the brain.

In regard to the urine, however, the detection of carbolic acid in it involves other considerations. Städeler, Buliginsky, and Lieber, state that carbolic acid exists normally in the urine; and Landolt apparently

confirms this point by showing that bromine water, added to about 500 cubic centimètres of normal urine, gives a precipitate yielding phenol when treated with sodium-amalgam. But Hoppe-Seyler states that bromine water decomposes paraoxybenzoic acid, and yields tribromophenol, and also converts salicylic acid into dibromosalicylic acid, which also yields phenol with sodium-amalgam; so that he does not think that Landoit's test proves the pre-existence of carbolic acid in the urine. He also thinks that when urine is distilled with sulphuric acid, carbolic acid may be formed by the action of the acid on indican or some other similar substance.

These considerations, however, are not likely to cause much practical difficulty, as in cases of carbolic acid poisoning the amount of the precipitate obtained by adding bromine water directly to a small quantity of the urine, will be greatly in excess of the turbidity manifested in a large quantity of the normal secretion.

Various antidotes have been proposed in the treatment of carbolic acid poisoning. Crace Calvert recommends olive-oil as retarding the action of the poison. Husemann has made experiments on animals with olive and almond oil among other substances, and finds that they do not prove efficacious. He recommends (*Chem. Centralblatt*, 1872, 36) as a successful antidote, if administered speedily, saccharate of lime, made by dissolving 16 parts of loaf sugar in 40 parts of water, and adding 5 parts of slaked lime; the mixture to be repeatedly agitated, then filtered and evaporated at 100° C. (212° Fahr.). The antidote is to be given in excess. By the use of this he has succeeded in saving animals which had received twice or even four times a fatal dose of the poison.

[The reporter has narrated in the *British Medical Journal*, Feb. 15, the particulars of a case of poisoning by carbolic acid, in which the diagnosis was made after death by the odor in the brain and other organs. Carbolic acid was also detected in the viscera after the method adopted by Hoppe-Seyler; and the passage of free acid into the urine was also detected.] D. Ferrier, M.D.

ADULTERATION OF VARIOUS ARTICLES OF FOOD.

Tea.—There are two chief classes of teas—the green and black varieties. Under the first head are included the Hysons, Twankay, and Gunpowder; and under black teas, Pekoe, Souchong, Congou, and Bohea. Both classes are subject to many serious adulterations at the hands of the exporters, and again on arrival in Europe. Mixtures of different kinds of tea are legitimately made in the course of trade

for the purpose of suiting special tastes; but inferior varieties are often dishonestly mixed with the more costly kinds in order to increase profits. Leaving aside the consideration of "tea-mixing," we find that to green and black teas have often been added the leaves of other plants. Those of plum, sloe, ash, willow, poplar, hawthorn, beech, plane, orange, elm, horse-chestnut, elder, and oak have been detected. These leaves are dried and prepared by roasting and "facing" so as to resemble genuine tea very closely. The product is sometimes called "Maloo mixture." Facing is used for the purpose of coloring the leaves and increasing weight. The bodies employed are China clay, gypsum, chalk, French chalk, black lead, Prussian blue, indigo, chromate of lead, carbonate, and even arsenite of copper, Venetian red, and fine white sand. The powders are attached to the leaf-surface by a convenient adhesive material. Spent (exhausted) tea-leaves are often dried, colored with catechu and an iron salt, then faced, and the product mixed with good tea, "Maloo mixture," or Lie tea. The last-named substance is made up of the tea and other leaves, sand, or plaster of Paris, bound together by starch or gum, so as to form granular particles that can be "faced," so as to resemble black or green gunpowder. *Genuine tea*, when placed in a muslin bag and kneaded in warm water for a few minutes, should not give up any powder, quickly subsiding when the water is allowed to stand.

Coffee.—Chicory, acorns, sawdust, roasted roots of various kinds, and grain, tan, croats, lentil seeds, baked livers, Venetian red, burnt sugar. Admixture with chicory is allowable if the compound be truly labeled. *Genuine coffee* should not cake when pinched between the fingers. When a little is thrown on cold water it floats, and very slightly tinges the water. Adulterated coffee sinks and rapidly colors the water brown.

Cocoa.—Chicory, cocoa-husk, fats, starches, sugar, Venetian red, bole. *Genuine cocoa* should not have a sweet taste, nor red color. As much cocoa as can be piled upon a threepenny piece, when placed on a square of platinum foil and strongly heated by a spirit-lamp flame, should burn almost completely away, leaving a very minute quantity of reddish-colored ash.* The same remarks apply to *chocolate.*

Sugar.—Fine white loaf-sugar is rarely adulterated, but colored sugars sometimes contain chalk, sand, clay, starch, sugar, flour, dextrine, plaster of Paris: as impurities, fragments of cane, molasses, vegetable albumen, and sugar-mites or acari. *Good sugar* should be free from the least bitter taste, and ought to dissolve completely in water. Loaf-sugar should give a perfectly clear and colorless solution; brown sugar

* The microscope is alone able to detect mixtures of many organic bodies, as starches fats, chicory, etc., in this and other cases. The simple tests given usually serve simply to exclude injurious substances.

a clear but colored liquid. If insects be present they float on the syrup, and appear as small specks, which can be easily removed for microscopic examination. *Bon-bons*, unless when mixed with harmless starch or injurious white or colored mineral powders, produce clear solutions when dissolved in water. If any insoluble residue be left, the deposit should be allowed to settle, the liquid poured carefully off, and the powder collected, dried, and heated on platinum-foil. If white and wholly combustible, it probably consists of starch. Chromate of lead (yellow), arsenite of copper (green), china clay and gypsum (white), and most other injurious mineral pigments, give insoluble and fixed powders. Sulphide of mercury or vermilion, though volatile when heated on platinum-foil, is easily recognized by affording a heavy red powder on treatment of the sweets with water.

Milk.—The chief is undoubtedly water; but skim-milk, annatto, brains, chalk, gum tragacanth, and other gums; sugar, decoction of white carrots, starch, and turmeric, are stated to be used occasionally. *Good milk* should be free from acidity, and when allowed to stand in a vessel ought not to deposit solid matter. When placed in a tall graduated glass cylinder, it should throw up at least 10 per cent. of cream after standing for twelve hours. This is on the whole the least objectionable rough test that can be used.

Butter.—Water, much salt, starch, flour, dripping and lard. *Good butter* should not have a rancid smell. When a quantity is melted and poured into a small narrow phial, and the latter allowed to stand near to a good fire, the milky layer of water that falls to the bottom of the bottle should not form more than one-tenth of the total bulk of fluid. When the melted butter is poured off, the water should not strike a blue color when shaken with a drop of tincture of iodine.

Bread.—Water, rice, potato, and other starches, salt, alum, bone-dust, clay, carbonate of magnesium, chalk, gypsum, and sulphate of copper; or impure from bad flour. *Good bread* is sweet and agreeable to the taste. It does not present a mouldy appearance, and ought not to give a thick liquid when steeped in water. If bread become soft and sodden on standing, it is probably adulterated with rice. When a piece containing much alum is dipped in a very weak solution of the coloring matter of logwood, the bread is quickly dyed of a purple tint. Good bread ought not to contain more than 38 per cent. of water, and should burn to a very minute ash when heated on platinum foil.

Flour (*Wheaten*).—Rice, barley, dari, bean-flour, "cones" flour, Indian corn, rye, potatoes, alum, gypsum, clay, ergot, darnel. *Good flour* should not be acid or musty, but ought to have a pleasant flavor. When a small quantity is burnt on platinum-foil (see Cocoa) a scarcely

perceptible residue of mineral matter should remain. As flour containing ergot is poisonous, it is a matter of importance to be able to distinguish this dangerous product of disease in the wheat. We can accomplish this easily by shaking up the suspected flour with a mixture of one part of chloroform and six parts of strong spirit of wine. The ergot, if present in the flour, will float on the liquid and form a brown scum.

Arrowroot (*West Indian*).—Potato-starch, sago-meal, rice, gypsum, china clay, chalk. *Genuine Maranta Arrowroot* is a dull white powder, which crackles strongly and in a peculiar manner when pressed between the fingers. When mixed with twice its weight of strong hydrochloric acid, it yields an opaque jelly. Potato-starch, under similar circumstances, affords a transparent jelly. When burnt on platinum-foil, arrowroot should leave a scarcely perceptible residue if unadulterated with mineral powders. A fragment of iodine placed on a warm plate near to the sample, colors Maranta arrowroot chocolate brown, sago-starch yellowish, wheaten-starch violet, and potato-starch a dull lilac color.

Meat.—Beef: Mutton. Good meat should possess the following easily observed characters: 1. It ought to be of a full, slightly brownish, red color; neither of a pale pink tint on the one hand, nor of a deep purple hue on the other. If pink, disease is indicated; and if purple, the animal has probably not been slaughtered, but has died with the blood in it, or has suffered from acute fever. 2. It should have a marbled appearance, from the ramifications of little veins of fat among the muscles. 3. It should be firm and elastic to the touch, and should scarcely moisten the fingers. Bad meat is usually wet, sodden, and flabby, with the fat looking like jelly or wet parchment. 4. It should have little or no odor, and not disagreeable; for diseased meat has a sickly, cadaverous smell. Any disagreeable odor is most easily detected when the meat is chopped up and drenched with warm water. 5. It should not shrink or waste much in cooking. 6. It should not become very soft and wet on standing for a day or so, but should, on the contrary, dry on the surface (Letheby). *Pork*, if unsalted, should present the characters above stated; but the color of the meat, if sound, is of very pale red tint. When infested by the dangerous parasite, trichina spiralis, the meat is usually of a dark color. Unfortunately, the animal itself can scarcely be detected by the unaided eye; not so the cysticercus, or measle, whose little sac is often as large as a hempseed, and can be easily seen. *Sausages* are liable to partial decomposition, and then become poisonous, from whatever kind of meat they may have been prepared. Good sausage-meat should be firm, not moist, gelatinous, and vesicular. It should be free

from disagreeable smell and taste, and from acidity. *Poultry.*—It is unnecessary to say more under this head than to point out that this class of meat should fulfil the conditions 4, 5, and 6, given above. *Fish* should only be used when fresh, and this condition can be easily ascertained. Fresh fish is free from offensive smell, and the flesh is not soft or gelatinous. It may be well to mention that fresh salmon or trout should not only have the well-known pink-colored flesh, but, when the finger is drawn quickly and firmly across the fish, the depression so caused ought to fill up quickly, and a corresponding elevation or ridge soon appear. Sea-fish is not tested in this way, but the rigidity of the fish is sufficient to indicate its fresh condition. The bright red color of fish-gills is a sign of very little importance, as the gills are often artificially tinted.

Isinglass—Though the best, or Russian isinglass, is an unimportant article of food, it may be well to mention that it is sometimes adulterated with gelatine and with inferior Brazilian isinglass. *Genuine Russian Isinglass* occurs in opaque white filaments, which do not become transparent when placed in water, nor do they swell to a material extent. Gelatine, on the contrary, becomes transparent, and swells considerably. Russian isinglass affords a firm, translucent jelly; the Brazilian variety, for corresponding weights of material and water, does not afford nearly so firm a jelly, and it is much more milky.

Vegetables and Fruit.—Under this head it is only necessary to say that these articles of food should be invariably used in a fresh and ripe condition. It is, however, often a matter of importance to be able to distinguish poisonous *Mushrooms* from those that are edible. It may be generally stated that mushrooms which have a disagreeable, styptic taste and a pungent smell should always be rejected. The edible mushroom, used in this country, has a white top and pink gills; as the fungus grows the gills change to a brownish or even nearly black color. *Preserved Fruits*, etc., should not be eaten, if mouldy or in a state of decomposition, as evidenced by effervescence or slight frothing, and an unusually acid taste. All preserves, if made in copper vessels, should be tested for copper by stirring a thick bright needle for some time through the preserve, mixed with a little warm water. If, after stirring and standing for an hour or so, the needle, on removal and rinsing with water, be free from any of the well-known reddish deposit of metallic copper, the preserve cannot contain any sensible quantity of the poisonous metal. The same test should always be applied to *Pickles.*

Vinegar.—Sulphuric acid, and other mineral acids, water, "grains of paradise," chillies, corrosive sublimate (?). Arsenic and copper as accidental impurity. *Unadulterated Vinegar* is allowed by special

enactment to contain one-thousandth of oil of vitriol. When paper moistened with vinegar containing this proportion of sulphuric acid is dried before the fire, no charring takes place until the paper is rather strongly heated; but if the proportion of acid be much greater, blackening results before the paper seems quite dry. It must be remembered that this is but a very rough and indecisive test. When a piece of clean and bright copper wire is immersed in vinegar, diluted with a little water, and heated nearly to boiling in a glass vessel, the copper quickly loses its color and assumes a leaden hue if arsenic or mercury be present. Copper may be detected in a fresh sample, much diluted with water, by means of the steel needle, as described under *Preserved Fruits*. Pungent substances, "grains of paradise," for example, may be detected by evaporating a quantity of the vinegar nearly to dryness in any convenient porcelain vessel. The residue should not have a fiery taste.

Mustard.—Ordinary mustard is rarely free from admixture with one or other of the varieties of flour, turmeric being added to improve the color. The addition of flour in moderate proportion may be permitted on the score of convenience, but turmeric should not be added. For flour, china clay, plaster of Paris, or chalk have been substituted, the coloring material being yellow ochre, or even the poisonous chromate of lead. *Mustard* should not become brown when moistened with a little "spirit of hartshorn," and when burnt on platinum-foil should leave but a small quantity of a nearly white ash.

Cayenne Pepper.—Dense flours or starches, mustard, turmeric, ochre, vermilion (?), red lead. *Cayenne*, when shaken with cold water, the mixture allowed to stand for a minute, and the liquid poured off, should not leave any heavy red powder at the bottom of the vessel. It ought to leave but little ash when burnt on platinum-foil.

Cheese.—Adulterants and Impurities.—Setting aside such coloring matters as annatto, saffron, etc., we find that the mineral pigments, Venetian red (red lead ?), are used, and various flours or starches to increase weight. *Cheese* should not be eaten when in a moldy condition, or when containing "jumpers." It ought not to become blue when touched with dilute tincture of iodine, and it should leave but little ash when burnt on platinum.—*London Medical Record.*

POISONING BY MORPHIA.—RECOVERY.

Dr. Cleland, of Detroit, Mich., reports a case of this kind that was successfully treated by him. He commenced with subcutaneous in-

jections of atropia, and used subsequently electricity, counter-irritation, and the cold douche. His account (*West Med. Advance*) is as follows:—

"I was hastily summoned one morning to the house of a patient, with the information that the hired girl, Mary, had taken morphine and was dying. On reaching the house I found the girl—a robust German girl, about twenty-two years of age—lying on the bed-room floor, where she had been laid in the efforts to restore her. She was apparently dying; breathing stertorous, four or five respirations a minute; pulse at the wrist barely perceptible and very rapid; carotids, on the contrary, full and bounding; lower jaw relaxed; countenance livid; extremities cold; body sweating profusely, and pupils intensely contracted. There was complete anæsthesia and muscular relaxation, and, as a matter of course, the power of deglutition was completely lost. Having little hopes of restoring animation, but concluding to make the effort at least, I immediately instituted artificial respiration according to Marshall Hall's method, at the same time using vigorous frictions to the extremities. Soon afterward I injected into the arm one-third of a grain of sulphate of atropia, and, still sustaining the frictions and artificial respirations, watched the issue with much interest. In seven minutes the effect was manifested on the pulse at the wrist by increased fullness; in ten minutes the body, which had been bathed in a clammy sweat, became warm, the perspiration drying up; at the same time the mind seemed to some extent to resume its sway, and to control muscular action, as she began to toss her arms feebly. The power of deglutition was also resumed, as she could, with difficulty, swallow a teaspoonful of water when placed in her mouth. Respiration was also becoming more regular, although the stertorous breathing still continued. In about fifteen minutes she sat upright on the floor, and in a few minutes we got her up on her feet and commenced walking her to and fro, using, occasionally, the cold douche to her head. The pupils now commenced to dilate, and in twenty minutes were about the eighth of an inch in diameter. Consciousness at this time became so perfect that she would answer a question when put to her in a decided voice. Deglutition also was so perfect that, with little difficulty, she swallowed a strong infusion of green tea.

"From this time, however, recovery seemed to retrograde. The muscular strength became weak, and we could with difficulty keep her on her feet; sopor became more profound; the pupils commenced to contract; respiration again became irregular; the surface became livid, and the pulse at the wrist feeble and rapid. At this climax I injected the remainder of my solution of atropia, which made the whole quantity injected one-half a grain. At the same time I com-

menced using electricity and vigorous counter-irritants, and the cold douche to the head.

"Recovery from this time progressed steadily. The pupils in ten minutes were dilated to about half their full diameter, consciousness returned, respiration became regular, and the circulation improved rapidly. At two o'clock, P.M., six hours from the time I was called, I left her in a quiet sleep, from which she could be easily roused, respiration and circulation fully restored. I called again about four P.M.; she was still sleeping lightly, and had partaken freely of food during the interval of visits.

"She now stated to me that she had purchased a bottle of morphine on the previous evening, with the intention of destroying herself with it. Half of this she took on retiring for the night, but immediately vomited it. She slept until about four P.M., she thinks, when she awoke and took the remainder, which she did not vomit. The empty dram bottle was found in her bed-room, and subsequently, on making inquiry at the drug-store where she had made the purchase, we found, in verity, she had bought a bottle of morphine the previous evening."

A Case of Chloroform Poisoning—Recovery.—A laborer, desiring to have a deep-seated abscess laid open, was directed to purchase an ounce of chloroform on his way home. One hour afterward, the surgeon repaired to the patient's residence and found that the chloroform had all been swallowed. When questioned, the man said that the dose had burned his tongue a little, but that he now experienced no ill effects except a desire to sleep. An emetic was at once ordered, to be followed by large draughts of milk. After a short absence, the surgeon returned and found the patient plunged in deep sleep. There was a complete loss of sensibility, and no response to any stimulus applied to the muscles, so that there was no difficulty in laying open the abscess. Respiration was now quiet and regular, the pulse full, slow and regular; the atmosphere was loaded with the fumes of chloroform. Vomiting had not yet taken place. There seemed now to be danger that the chloroform would produce some injury to the mucous membrane of the stomach, more especially since, on account of the original trouble, no food had been partaken of for several days. The patient now lay plunged in deep sleep for the next eight hours; signs of returning consciousness were then noticed, although two more elapsed before he became fully aroused. Violent vomiting now set in, and large quantities of a watery fluid were brought up, having a very decided odor of chloroform. After the vomiting ceased, he expressed himself as feeling quite as well as ever. The man had been addicted to the use of alcohol, which may,

perhaps, account for the extraordinary circumstance that chloroform, which acts so readily upon the external surface of the body, produced in this case no appreciable ill effects upon the lining membrane of the stomach. It would appear from the above experiment that chloroform, when introduced into the stomach, acts more slowly, but in the end more powerfully, than when inhaled.—*Deutsches Archiv. f. Klin. Med.*—*The Druggist.*

Strychnia and its Antagonists.—Professor Ranieri Bellini, after conducting a long series of experiments on poisoning by strychnia and its salts, arrives at the opinion that the best antidotes are tannic acid and tannin, chlorine, and the tinctures of iodine and bromine. Chlorine, he maintains, attacks the strychnia even when it is diffused through the system; for he found that in rabbits poisoned with the sulphate of the alkaloid, on being made to inhale chlorine gas in such quantity as was not sufficient in itself to kill, the convulsions were retarded, and were milder when they occurred; death was also less rapid. The author further observed, that when strychnia was exhibited with pyrogallic acid, the convulsions were retarded for the space of half an hour, in comparison with other experiments in which the alkaloid was given by itself. Professor Bellini believes that this arrest in symptoms is not dependent on the acid acting chemically on the strychnia, but only through the astringent effects produced by the acid on the mucous membrane of the stomach, whereby the absorption of the poison is rendered difficult. The same author, dwelling on the frog-test for strychnia, asserts that this test is not to be trusted, inasmuch as other poisons produce the tetanic symptoms, although in a less degree. He adds, in speaking of the effects of the antidotes to which reference has been made, that he trusts his results will have a bearing not only on the treatment of strychnia tetanus, but on traumatic and idiopathic tetanic disease.

Picric Acid as a Test for Albumen.—M. Galippe recommends, as an extremely sensitive and thoroughly reliable test for albumen, a saturated solution of picric acid. In normal urine this solution never causes precipitation, while the most minute traces of albumen are readily detected by it. The *modus operandi* of applying the test is as follows: A drachm or two of the picric acid solution is put into a test-tube, and a few drops of the fluid to be tested are allowed to fall into the solution. If albumen is present, it traces a characteristic white line through the testing solution.—*Archives of Scient. and Pract. Med.*

Poisoning by Aconite—Recovery.—Dr. Ludlow, of Cincinnati, has reported the case of a lady, æt. 86, who by mistake took a half

ounce of a liniment which contained one drachm of tinct. aconit. rad. He arrived one hour after the dose had been taken. Found patient cold and unconscious. Respiration scarcely perceptible. Heart beating, pulsation in carotids, but none at wrists. He applied hot bricks and bottles of hot water in axillæ, between the thighs and to the feet, mustard plasters over the body, and poured brandy and carbonate of ammonia freely down the patient's throat. In one half hour body became warmer, respiration improved. In two hours she could speak, and next day was perfectly well.

Johnston on the Antagonism between Opium and Belladonna.—During his residence in China, Dr. Johnston (*Hospital Reports*, Shanghai, March, 1872) has had great experience of opium-poisoning and the ill effects of opium-eating. During the last seven years he has treated upwards of three hundred cases of opium-poisoning. He first employed atropia in 1869. He employs it hypodermically in the severer cases, where the patient is profoundly comatose. In milder cases, emetics, the stomach-pump, cold douche, and constant exercise are generally sufficient. It is in the worst cases that atropia displays its wonderful effects; for instance, where the pupils are firmly contracted to a pin's point and immovable, the conjunctiva and the cornea insensible to touch; the face pale; the lips, eyelids, and nails livid; the pulse weak and irregular; the breathing slow and stertorous and the extremities cold. In such cases, he usually injects hypodermically half a grain of atropia. Within ten or twenty minutes the pupils begin slowly to dilate; and, after an hour or more, the face becomes flushed; the breathing soft, without stertor; and the pulse stronger. Within two hours the full effects of the drug (atropia) are manifest, viz., "widely dilated pupils, flushed face, hot skin, tranquil slow breathing, diminished frequency and increased strength of pulse, followed by calm and tranquil sleep, from which the patient is easily wakened after three or four hours." If within two hours the first dose fail to dilate the pupils, flush the face, and render the breathing slow, steady, and tranquil, he repeats the injection. In cases where the coma is not profound, he first employs a quarter of a grain of atropia, repeating the dose if the first be insufficient. He says, "I have observed very sudden and very unfavorable changes set in rapidly, even in the mildest cases of opium-poisoning. This has happened so frequently, that I have come to the conclusion that whenever there is contraction of the pupil and great drowsiness, after the evacuation of the contents of the stomach, it is always advisable to administer a small dose of atropia. I may remark, that in no instance have I seen any bad effects following the subcutaneous injection of atropia."—*London Medical Record.*

Lime for Poisoning by Plants and Insects.—According to the *Boston Journal of Chemistry*, a standing antidote for poison by oak, ivy, etc., is to take a handful of quick-lime, dissolve in water, let it stand half an hour, then paint the poisoned parts with it. Three or four applications cure the most aggravated cases. Poison from bees, hornets, spider-bites, etc., is instantly arrested by the application of equal parts of common salt and bicarbonate of soda, well rubbed in on the place bitten or stung.

A New Poison—Pahonim—Physiological Action.—We take from the *Lancet* (March, 1873) the following results of various researches, by M. Carville, with the seed of the poison of pahonim, from Gabon. The pahonim poison is extremely violent; one-tenth of a grain of the alcoholic extract is sufficient to kill a large dog. It kills by stopping the heart's action. It first abolishes the contractility of the muscular fibres of the heart, then that of other muscles. When placed in the pericardium it arrests the heart's action more rapidly than when injected in equal quantities. It does not abolish excitability of nerves, but brings on death without seeming to act on the great sympathetic, the encephalon, the spinal cord, or the pneumogastric. There is no antagonism between this poison and woorara. It acts less rapidly through gastric than cutaneous absorption. It acts more rapidly than digitaline and antiarine, but the final effects are slower in supervening. It stops the heart of a snail, which digitaline does not. In the higher animals it produces vomiting. Of the chemical nature of this poison the author does not speak.

Inœa.—There has lately been discovered a poison called *inœa*, which is said to be more subtle than digitaline. It is obtained by pressure from the seeds of *Strophanthus hispidus*, an apocynaceous plant, found in Gaboon; and from experiments made with samples of it, taken from arrows, upon which the natives place it, it appears that it acts more powerfully than digitaline or antiarine, and quickly paralyzes the heart. Three milligrammes kill a frog, a sparrow, or a dog, though the resistance of certain animals varies. A snail, for instance, requires five milligrammes; a mouse has withstood three milligrammes of the extract (obtained by macerating the seeds in alcohol), while this latter dose kills a dog nearly a thousand times heavier than the mouse. The heart comes to a complete standstill after a few irregular efforts.—*Exchange.*

A New Poison, from the Bamboo Cane.—The inhabitants of the island of Java have the reputation of being very ingenious as well as very vindictive, and accounts have just reached Europe of an in-

stance in which they have exercised one quality to gratify the other. They have discovered a new poison. The bamboo cane—an inoffensive plant, at least certainly not an insidious one in its efficacy of inflicting torture—is the subject matter from which the latest virus is to be extracted. The natives of the island cut the canes down at the knot, and scoop out all the little black filaments which make a kind of reservoir at this point. These filaments are found to possess the most violent poisonous properties, for which as yet no antidote has been discovered. The practice at Java is to mix a preparation of the poison, either with the solid food or drink of the proposed victims, and the peculiarity of the action of the poison is, that instead of passing into the stomach and working there, it stops at the throat, acts upon the respiratory organs, and produces violent inflammation. Experiments have been tried upon the favorite victims of scientific empiricism—dogs—and the effect of the poison upon them resembles that of asphyxia with a poisonous gas.—*Exchange.*

Animal Poisoning from the use of Soap.—Dr. Crotters, of Albany, N. Y., reports, in the *Medical and Surgical Reporter*, of April 19th, a unique case of poisoning traced to the use of a particular kind of soap. The symptoms produced consisted of a peculiar pustular eruption over the face and hands, together with general debility and frequent nausea. The eruption had existed more than six months, when the patient applied to Dr. C., and had been treated already with a great variety of remedies, but with no permanent benefit. The pustules were irregular, deep-seated, suppurating rapidly, giving out offensive pus, and very painful. Abrasions on the hands would be followed by similar pustules or ulcers. On discontinuing the use of the soap, which had been frequently used partly from the fact that it claimed to possess healing properties, the eruption rapidly disappeared.

To demonstrate the poisonous character of the soap, Dr. C. applied some of it to a sore on the neck of a horse, produced by the chafing of its collar. The third day after using it numerous dark-bluish ulcers appeared over the sore and discharged much offensive matter. Discontinuing the use of the soap, the ulcers healed rapidly. The doctor was convinced that the soap contained an animal poison, and, pursuing his investigations, found that the fat used in its manufacture was procured from "dead horse" or "bone-boiling" establishments. A visit to one of these establishments revealed the source of evil beyond question. Here were dead animals, gathered from all parts of the city, their skins removed and in all degrees of decomposition, awaiting the boiling process, by which the "soap grease" is extracted from the

carcass. The decomposing animal matter adhering to the fat, and subsequently incorporated into the soap, might easily produce the effects observed to follow the use of the soap in question.

Poisonous Properties of Fuchsine.—During the last three or four years a great deal has been written in regard to the danger of employing magenta as a coloring for syrups, etc., and also of the ill effects which might result from wearing, in close proximity to the skin, articles of dress dyed with this substance. In *Le Technologiste* there appears an article by M. Springmuhl, in which is given the result of various experiments made with a view of determining the amount of arsenic remaining in fabrics dyed by fuchsine; and also as to the probable amount contained in syrups or liquors colored by this substance. An examination of fourteen samples of commercial magenta gave proportions of arsenic varying from one-quarter per cent. to six and a half per cent. A piece of woolen fabric was dyed with the sample containing the most arsenic, and was washed in two waters, the last of which was found to contain .0004 gram. of arsenic, a quantity which the author rightly concludes could not be considered very dangerous. It was also found that it required but .002 gram. of fuchsine to communicate a strong color to a litre of alcohol, and as a person would not generally consume more than that quantity of any liquid, the small amount of arsenic could not exert any poisonous action.

Adulteration of Raspberry Syrup.—The German Pharmacopœia gives an excellent test for the genuineness of raspberry syrup. If one volume of the latter is mixed with half a volume of pure nitric acid (25 per cent.), the fine red color of the syrup must not change to yellow, otherwise the syrup owes its color to some dyestuff, which has nothing to do with raspberry fruits. A syrup which contained only a small quantity of artificial coloring matter remained 24 hours unchanged, and only after this time showed a yellow color; while genuine syrup, when treated with nitric acid, even after three days' standing, showed no change of color. It is indispensable that the experimenter should be very careful as to the measurement of the volumes. Dr. Hager states, besides, that syrup colored with aniline becomes colorless when treated in this manner with nitric acid.—*Chemist and Druggist.*

Various Poisonous Coloring Matters.—Dr. Hirt, of Breslau, has recently called attention to the increasing use in trade of poisonous coloring matters, especially those containing arsenic and lead. He

visited the establishments of confectioners, gingerbread-makers, stationers, toy-dealers, hair-dressers, colored-paper makers, and flower-makers, and arrived at the following results: He detected arsenic in the coloring matters used for painting over sugar-plums, and also in the green paper employed for wrapping articles of food, for covering toys, and for lamp-shades. Arsenic was also found in the paints in children's paint-boxes. Lead was found in the coloring matter of articles of food, in colored papers used for packing substances of food, and the covering of toys, as well as in children's paints and in wafers and hair-dyes. The danger incurred, especially by children, in consequence of the use of lead colors in paper used for packing, Dr. Hirt states to be very great. A brick-colored paper, containing red lead, is very extensively used for packing chocolate tablets and bonbons; and Dr. Meusel found each sheet to contain about 28 grains of lead, representing about 29 grains of oxide or 51 grains of sugar of lead. Each sheet is sufficient for packing sixteen chocolate tablets or from thirty-two to thirty-six bonbons; consequently, with each tablet there are 3 grains of sugar of lead, and with each bonbon $1\frac{1}{2}$ grain. It is not necessary that the children should lick the paper to produce poisoning; for the sugar used in bonbons has a tendency to unite with the lead and form a saccharate, and thus to render soluble the perhaps otherwise insoluble lead compounds. The boxes containing the chocolate tablets and bonbons are often damp, and the wrapping-paper is soft and pervious to moisture; and there can be no doubt that the materials contained in the papers must come into contact with the lead and become impregnated with the poison. Dr. Hirt remarks that various orders of Government passed during the last fifty years are in force, and are sufficient, if carried out, to prevent the use of such materials as those to which he has referred; but they are not sufficiently known, and are only in force in the district of Breslau—the town itself being apparently exempt.—*London Medical Record.*

PRESCRIPTIONS AND FORMULAS.

Liquor Picis Alkalinus.

This preparation was originally devised by the late Dr. H. D. Bulkley, of New York, to fill the place of a secret French preparation of tar. Dr. L. D. Bulkley, in the February number of *Archives of Scientific and Prac. Med.*, gives the formula as follows:—

℞. Picis liquidæ... ʒ ii.
Potassæ causticæ ʒ i.
Aquæ..... ʒ v. m. ft. sol.

This mixes with water in all proportions, and discolors the skin to a very moderate extent. It dries rapidly and leaves very little stickiness. He has used it in all degrees of strength, and regards it as one of the best methods of employing tar. The potash heightens the anti-pruritic effect of the tar. The solution he has employed with advantage in eczema, both in its chronic stage with thickenings, and in the more acute forms, where exudation has about or nearly ceased, and the itching is intense. In chronic cases with infiltration, it may be used in full strength. Good success has followed its use in lupus erythematosus and psoriasis.

Triplex Pill of Dr. John W. Francis.

℞ Powdered socotrine aloes
" scammony
Mercurial pill mass. .ää. ʒ j.
Croton oil.....m xx.
Oil of caraway.....fl ʒ jss.
Tr. aloes and myrrh.fl ʒ ij.

Mix the ingredients together by very thorough trituration, make a pill mass, and divide into four hundred pills.

The usual aperient dose is one pill at bed-time, till the natural condition is restored.—*Proc. Am. Pharm. Assoc'n.*

Unguent Diachyli Albi.

Hebra.

Olei oliv..... ʒ xv.
Lithargyri..... ʒ iij. et ʒ vj.
Coque l. a. in ung. moll., dein adde—
Ol Lavandulæ.. ʒ ij.
M Fiat unguentum.

Formulas for Poultices.

The article "Cataplasm," in the new *Dictionnaire des Sciences Médicales* has been worked up by M. Brochin as completely as possible to the actual state of our knowledge of this ancient method of treatment. Amongst the opinions of authors and modern modes of compounding cataplasms, M. Brochin cites those of Cayol, Broussais, Réveillé-Parise, and especially Velpeau and Trousseau. The editor of the *Journal de Médecine*, from whom we quote this article, observes that he has had the opportunity of following the last-named illustrious physician for some years, and never heard him order either a bath or a cataplasm; occasionally, however, and with a certain air of solemnity, he would order poultice. This was made nearly as follows:

℞ Extract of stramonium, or
Extract of belladonna;
Extract of opium;
Camphor in powder;
Water. Of each 10 parts. Mix.

A bread poultice having been made, some camphorated alcohol is to be boiled with it; the paste should then be enclosed in a little muslin or tarlatan, and the surface watered with the above mixture. It is then to be applied and covered with some impervious cloth and a large piece of flannel. M. Brochin leaves out the camphor in powder, and replaces it with ten

parts of ether. This topical application, which is rather expensive, can be retained in place several days. Trousseau only employed it in grave cases, such as mono-articular arthritis with acute osteitis and puerperal arthritis. He prescribed calomel simultaneously, and insisted on perfect immobility of the limb. The following is a narcotic poultice prescribed by MM. Bouchat and Despres:—

℞. Powdered Hyoscyamus leaves:
" Conium leaves;
" Belladonna leaves;
" Solanum tuberosum leaves;
Linseed meal. Of each 20 parts.
Decoction of poppyheads, q. s.

Conium is also used in poultices specially intended for the relief of superficial cancers:

Crushed carrots, 500 grains;
Powdered conium leaves, 30 grains;
Powdered opium, 1-20 grain.

The following is intended to act as a diuretic poultice:—

Bruised squills, 100 parts;
Nitrate of potash, 10 parts.

And this to render the emission of urine less painful:—

Bruised white onions, 6 in number;
Leaves of parietaria, 50 parts;
Decoction of marshmallow, q. s.

Both may be applied over the pubis.—*Pharm. Journ. (Lond.), Feb.* 1, 1873.

Pruritus Vulvæ.

LISFRANC.

Take of Bichloride of mercury..1 part.
Alum.....20 parts.
Starch.....100 "
Water.....2,500 "
Mix.

S. Apply freely to the part.—*Revue de Thérap.*

Formula for Podophy lin.

A writer in an exchange says:—

The griping effects of podophyllum resin may be readily obviated by combining it with small doses of extract of hyoscyamus. You will find the following a good formula for podophyllum pills, sometimes sold under the name of "Aperitive Seeds," or "Castor-oil Pills:"—

℞. Res. podophyll.,
Ext. hyoscyam., aa gr. iij.
Sapon. dur.....gr. ivss.
Syrupi.....gtt. vj.
M. Ft. pil. xii. in arg. fol.

Table Showing Amount of Sulphuric Acid Necessary to Dissolve Alkaloids for Hypodermic Injection.

Alkaloid, 1 part.	Acid.
Aconitia (Duquesnel)	1 part.
Atropia	2.5 "
Narceine	7.5 "
Strychnia	2.5 "
Veratria	2.5 "

—ADRIAN, *L'Abeille Médicale.*

Reid's Cholera Syrup.

℞. Chloroform.....℥ j.
Gum camphor.....℥ iij.
Tinct. opium.....Oj.
Best French brandy....Oij.
Tinct. cloves.....℥ viij.
Simple syrup.....Cong. ss.

As soon as bowel complaint makes its appearance, take a teaspoonful of the syrup and go to bed; repeat the dose every time the bowels are moved, increasing it if the first proves inefficient. Children should be dosed in proportion to age.—*Phila. Med. and Surg. Reporter.*

Remedy for Influenza.

Dr. Allan McLane Hamilton, writing under date of February 17th to the *Medical Record*, recommends the following treatment for this annoying affection. His directions are:—

Prepare the following mixture:—

℞. Carbolic acid....gtts. x.
Tr. iodine } ....āā ʒ ij.
Chloroform }

Put a few drops of this mixture in a test-tube, and heat them over a spirit-lamp; when volatilization occurs the mouth of the test-tube should be held

beneath the nostrils. This operation is to be repeated every two or three hours. A violent fit of sneezing occurs at first, which is afterwards succeeded by a diminution of the symptoms.

Tobacco Enema.

Dr. N. S. Davis, of Chicago, recommends for extreme cases of obstructions of the bowels, an infusion of one drachm of chewing tobacco in a pint of boiling water, one-half or more to be injected when cool enough.

Iodoform Ointment for Prurigo.

Prof. Tanturri, of Naples, recommends for the obstinate itching disease of the skin known as prurigo an ointment of iodoform. This remedy (iodoform) has strong anæsthetic properties, so that it is efficacious by deadening the sensibility of the nerves of the surface. Iodoform contains about 90 p. c. of iodine. When piles are very painful, especially during defecation, such ointment would be found to possess great virtue. Moûtre's formula for suppositories is:—

℞. Iodoform, powdered....20 grains.
Cocoa butter..... ..1 drachm.
Melt and mix for suppositories.

For friction of the skin, the ointment is made of the strength of one drachm of the iodoform to an ounce of simple ointment.

Syrup of the Bromide of Iron.

Take of bromine three troy ounces; iron (in the form of wire) 350 grains; distilled water, three fluid ounces; citrate of potash, six troy ounces or q. s.; syrup, a sufficient quantity. Put the iron, with the distilled water, in a flask, and add of the bromine two troy ounces in small portions at a time, allowing the mixture to cool, if necessary, before the addition of each fresh portion. When the odor of bromine has disappeared, warm the mixture gently, until it assumes a green color; filter and add the remainder of the bromine. Transfer the resulting solution of ferric bromide to a porcelain mortar, and add gradually, with constant trituration, citrate of potash until the color of the mixture changes from brown to green; finally, add simple syrup to make up 30 fluid ounces. The syrup thus prepared corresponds nearly in strength with the syrup of the iodide of iron, and may be administered in doses of 20 to 30 drops. It is elegant in appearance, not disagreeable in taste, and is not incompatible with alkalies or with tannic acid.

Syrup of Ipecac.

B. F. McIntyre, in the *American Journal of Pharmacy*, offers the following formula for syrup of ipecac: fluid extract of ipecac, fl. ℥ j.; water, fl. ℥ xvij.; gran. sugar, ℥ xii. Dilute the fluid extract with a pint of water, set aside for 12 hours, filter, evaporate to 6 fl. ℥; filter, add, through the filter, 1 fluid ounce of water; finally, add the sugar and dissolve with gentle heat. The finished syrup should measure 16 fl. ℥. The addition of water to the extract is designed to precipitate the resin which is generally present in the extract. The process of the new Pharmacopœia for fluid extract of ipecac is pronounced by the same writer defective, and in no way superior to the old process. The amount of menstruum employed is insufficient for the complete exhaustion of the drug; there is a great waste of alcohol, and the great desideratum of eliminating the resin is not accomplished. The old formula is more economical and yields a better product.

Typhoid Fever.

Arnica may be valuable in collapse, but where there is lung complication, with increased action of the heart, and rapidity of breathing, the tincture of arnica, in doses of fifteen to twenty drops every three or four hours, will be found exceedingly useful, reducing the pulse with almost the certainty of veratrum,

without its depressing effect. Here, too, ipecac is often of great value. Arsenic, too (in the form of Fowler's solution), where the tongue is dark and dry, with red edges, the secretions suppressed, the stomach irritable, the bowels flatulent, will be found in many cases exceedingly useful. It is well borne in doses of three or four drops every six hours.—*Clinic.*

Vermifuge Syrup.

Extract spigelia maryl., fl. ʒ viii.; syrup sennæ compos. (Lond. Ph.), ℔ ii. Mix while hot, and evaporate to a proper consistence. Dose, a small teaspoonful for a child one year old.

Extracts in Powder.

It is sometimes very desirable to administer the solid extracts (say extract of hyoscyamus) in the form of a powder. All such extracts may be reduced to fine powder by patiently rubbing them (say two or more hours) in a mortar with an equal quantity, by weight, of calcined magnesia. Extract of gentian yields the slowest to this manipulation.—*Boston Medical and Surgical Journal.*

Tincture of Chloride of Iron for Corns.

Dr. C. Barber states (*Lyon Médicale*) that he has cured three cases of corns on the toes by the application of a drop of the tincture of chloride of iron applied on corns night and morning. This application was continued for fifteen days in one case, when the corns, from which the patient had suffered for thirty or forty years, were entirely destroyed, and pressure on the part gave not the least uneasiness.—*South. Med. Record.*

Arsenic in Disease of the Liver.

In a case of disease of the liver (recorded by Dr. de Moura in the *Gaceta Medica de Ballia*), in a patient of cachectic habit, with pallor of the surface, polyuria, want of appetite, and tumefaction of the liver, and in which analoid degeneration of the organ through syphilitic causes was diagnosed, the administration of arsenic was completely successful, after iron, the vegetable tonics, iodide of potassium, and corrosive sublimate had all failed.—*South. Med. Record.*

Erysipelas.

Dr. Reamy (*Clinic*) says that in cases where large doses of mur. tr. iron would not be borne by the stomach, he withholds the iron for a time, giving a few doses of potass. bromid., which he finds almost invariably to give tolerance to the stomach, when the iron can be resumed in full doses.

Chlorodyne.

The following formula is given as the one employed by D. J. Collis Browne:—

Chloroform.....	½ fluid ounce.
Sulphuric ether.....	90 minims.
Oil of peppermint.....	8 drops.
Resin of cannabis indica.	8 "
Tincture of capsicum...	2 "

Mix, shake occasionally, and allow it to stand a few days. Then dissolve with heat

Muriate of morphia.....	16 grains.
In water.....	2 drachms.

and when cold, add of

Scheele's hydrocyanic acid,

U. S. P.....	65 minims.
Perchloric acid....	1 fluid drachm.
Molasses...	2 fluid ounces.

Add this carefully to the first mixture and increase the whole to four fluid ounces by the addition of molasses.

A New Drop-Glass.

M. Limousin, a French chemist, has introduced a drop-glass which is highly commended. It consists of a little reservoir, with a minute tube about two inches long, and with a diameter of three millimetres. A drop of distilled water from this tube weighs exactly five centi-

grammes, and therefore twenty drops weigh exactly one gramme. The following table has been prepared by M. Limousin, to accompany his instrument, and as it gives the relative value of drops, its indication will often be found useful. It shows, at least, how very important it is that strong medicines, when ordered by the drop, should always be measured, the variation in the weight of a drop being so very considerable.

20	drops	of distilled water	weigh	one gramme.
20	"	Pearson's solution	"	
23	"	Fowler's solution	"	
28	"	Sulphuric acid	"	
38	"	Laudanum	"	
40	"	Black drop	"	
48	"	Croton oil	"	
54	"	Chloroform	"	
56	"	Eau de Rabel	"	
58	"	Tincture of Nux Vomica	"	
58	"	" Aconite	"	
58	"	" Arnica	"	
58	"	" Belladonna	"	
58	"	" Colchicum	"	
60	"	Alcoholate of Aconite	"	
60	"	Bitter drops of Baumé	"	
70	"	Hoffman's Anodyne	"	
96	"	Ethereal tin. of Digitalis	"	
98	"	Sulphuric ether	"	

. —*Drug. Circ.*

Cod Liver Oil Jelly.

At a meeting of the Medical Society of Stockholm, Sweden, this article was exhibited, as prepared by E. Queru, of New York city, and the following was stated to be its composition:

Cod-liver oil	85 parts
Isinglass	3 "
Sugar	8 "
Water	4 "

As there exhibited, it was a semi-transparent jelly of a yellowish-green color, having a strong odor, but less strong taste of the oil. The advantages claimed are easy administration and complete assimilation, and its retention by the weakest stomach.—*Pharmacist.*

The Practice of Concealing the Bitter Taste of Drugs.

M. Briquet considers the common practice of administering quinia in coffee open to much objection. He alleges that the tannin in the coffee coalesces with the quinia, forming a tasteless and insoluble and almost inert salt,—the tannate of quinia,—from which the stomach has as much difficulty in extracting quinia as from powdered bark. It is, he thinks, one of the worst preparations of quinia. It is said that the bitter taste of colocynth, aloes quassia may be almost instantly removed by chewing a small piece of liquorice root.—*La Tribune Médicale.*

Compound Arsenical Paper.

Receipt Book of the Philadelphia Hospital:—

℞ Belladonna leaves	grs. xcvj.
Hyoscyamus "	...
Stramonium "	...āā grs. xcviij.
Ext. opium	grs. iv.
Tobacco	grs. lxxx.
Add	
Potass. nit	grs. cxx.
Potass. arsenit	grs. cccxx.

Take thick bibulous paper, soak it in this solution and allow to dry. When set on fire and the flame extinguished, this paper burns slowly without flame, and emits a dense smoke which may be inhaled for the relief of asthma, often with very marked benefit. It is also useful in chronic bronchitis.

For Excessive Perspiration of Hands or Feet.

A German pharmaceutical journal recommends the following:—

℞ Carbolic acid	1 part.
Burnt alum	4 parts.
Starch	200 "
French chalk	50 "
Oil of lemon	2 "

Make a fine powder, to be applied to the hands and feet, or to be sprinkled inside of the gloves or stockings.

Salve for the Lips, etc.

The following is used for excoriations, warts, and cracks, superficial ulcerations

of the lips, mucous membrane of the cheeks, red parts of margin of nose, and other parts of the skin which are normally red:—

℞ Ammoniated mercury.....gr. vj.
Carmine.....gr. i.
Soft cerate.....dr. ij.

Mix exactly.

The parts should be dried before the salve is applied.

New Anodyne Colloid.

The London *Practitioner* gives the following formula as "likely to prove a useful application in neuralgic and other localized pains:"—

℞ Amyl. hydrid.....ʒ j
Collodion (B. P.).....ʒ j.
Aconitiæ.....gr. i.
Veratriæ.....gr. vj.

This forms a colloid which should be brushed over the painful part five or six times, forming successive films. If the pain be not at once relieved, the absorption of the alkaloids may be favored by covering the colloid film with a layer of spongio-piline.

For Chilblains.

L'Union Medicale recommends the following application:—

℞ Oxide of zinc..... 2 parts.
Tannic acid..... 1 "
Glycerine.....10 "
Balsam of Peru.... 8 "
Camphor..... 4 " M.

—*Boston Journal of Chemistry.*

Glycerine Ointment.

Take of Starch..... 3 parts.
Glycerine.....10 "

The starch well powdered is to be digested for an hour with the glycerine at the heat of boiling water. For many purposes very soothing. The glycerine should be of the best.

"Dr. Eve's Recipe for Gleet and chronic irritation of the urethra:

℞ Balsam copaiva..... 1 oz.
Pulv. cubebs..... ½ "
P. gum arabic..... 1 "
Spts. nitre..... 1 "
Syrup buchu..... 4 "
Cinnamon water to fill black bottle.

Dose, 2 tablespoonfuls twice a day."

hicago Med. Examiner.

Laxative Powder of Jeannel.

Take of—

Rochelle salts..... 50 parts.
White sugar.....100 "
Bicarbonate of soda..... 22 "
Tartaric acid, powdered.. 20 "
Oil of lemon..... q.s.

Mix.—Dose, a teaspoonful in sweetened water.

Pleis's Fit Powders.

Dr. A. W. Miller has examined this nostrum—extensively advertised in the East for the cure of epilepsy—and communicated his results to the *American Journal of Pharmacy*. He concludes that the remedy is composed of bromide of potassium, disguised by the addition of a little powdered gentian. Each powder contains about 15 grains of coarsely-powdered bromide of potassium and 5 grains of gentian.

Frank's Ointment for Freckles, etc.

Take of—

Flour of Mustard.....3 ounces.
Lemon-juice to make a stiff paste.....q.s.
Oil of almonds.....½ fl. ounce.

GENERAL RECEIPTS.

Red Branding Ink.

Cinnabar	7 parts.
Carbonate of magnesia	4 "
Turpentine	1 "
Linseed oil	6 "

Rub down thoroughly till well mixed.

—*Druggists' Circular.*

A Liquid Blacking.

Vegetable black	3 pounds.
Ivory black	1½ "
Molasses	5 "
Glycerine	5 "

Mix.

Then take six ounces of gutta-percha. Melt, and add:

Olive oil	20 ounces.
Stearine	2 "

While this second mixture is hot stir it into the first, then add:

Gum Senegal	10 ounces.
Water	3 quarts.

For use this stock blacking should be diluted with about three parts of warm water.—*Druggists' Circular.*

Gas-tight Corks.

Corks saturated with paraffin are used for corking bottles containing alcoholic or caustic liquids. Ruschhaupt prepares them as follows: Paraffin is fused in a suitable vessel, the dry corks are added and immersed in the paraffin by means of a perforated cover or disc. The air is now easily expelled from the pores of the corks, which, after about five minutes, are removed and cooled; they may now be cut and bored like wax, are easily driven into the necks of bottles and readily removed, retain their smoothness and are gas-tight throughout.—*Apoth. Zeitung, Can. Pharm. Journ.*

How to Clean Bones.

Soda ash	lb 1
Lime (burned)	½
Hot water	qrts. 3

Mix, and soak the bones for 24 hours in the liquid; wash them thoroughly and bleach them.

The Process of Embalming.

The Brunetti process for the preservation of the dead has recently published in *La France Medicale.* It consists of several processes:—

1. The circulatory system is cleared thoroughly out by washing with cold water till it issues quite clear from the body. This may occupy two to five hours.

2. Alcohol is injected so as to abstract as much water as possible. This occupies about a quarter of an hour.

3. Ether is then injected to abstract the fatty matters. This occupies two to ten hours.

4. A strong solution of tannin is then injected. This occupies for imbibition two to ten hours.

5. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy from two to five hours.

The body is then perfectly preserved and resists decay. The Italians exhibit specimens which are as hard as stone and retain the shape perfectly, and equal to the best wax models.

A more simple form of injection suited for anatomical purposes consists of

Glycerine	14 parts.
Soft sugar	2 "
Nitrate of potash	1 "

It is found that after saturation for

some days in this solution the parts become comparatively indestructible and change neither in size or figure.

Preservation of Tissues.

A French chemist has recently announced that borax and subborate of ammonia will prevent mouldiness and preserve animal matter. Each of the above salts has proved effectual when tried separately, and when combined in a single solution they seem to be well adapted for anatomical injections. For this purpose the following preparation is recommended; rain-water one hundred parts, common borax six parts, and subborate of ammonia twelve parts. The liquid is to be used luke-warm; it does not change the color of the tissues, and is not poisonous, does not blunt the dissecting instruments, and in a concentrated state may be used for embalming.—*Phila. Med. & Surg. Rep. Can. Pharm. Journal.*

Metallic Soap for Canvas.

The following is highly recommended as a cheap and simple process for coating canvas for wagon-tops, tents, awnings, etc. It renders it impermeable to moisture, without making it stiff and liable to break. Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the oxide of iron is precipitated with the fatty acid as insoluble iron-soap. This is washed and dried, and mixed with linseed oil. The addition of dissolved India-rubber to the oil greatly improves the paint.

Explosive Mixture of Nitrate of Potassa and Acetate of Soda.

A French chemist (*Pharm. Jour.—Amer. Jour. Pharm.*) heated together a few grains of anhydrous nitrate of potassa and acetate of soda. At a temperature of 350° the mixture exploded with the force of gunpowder. He found the best proportion for exploding to be 100 parts of the fused nitrate to 60 of the fused acetate. A mixture of nitrate of soda and acetate of potassa has the same property.

Vegetable Parchment.

A foreign scientific paper says: "The common method of preparing this exceedingly useful material requires much care and experience on the part of the operator, and only gives satisfactory results when the strength of the sulphuric acid and length of the process are accurately apportioned to the substance and texture of the unsized paper to be dipped. Mr. Colin Campbell has made a modification of this process, which promises many advantages. Before treating the paper with sulphuric acid, he dips it in a strong solution of alum, and dries it thoroughly. When paper thus prepared is passed through concentrated sulphuric acid it is converted into parchment paper just as before, but the presence of the alum prevents the action of the acid from being so rapid as before, and therefore renders the whole operation much more manageable. Paper which has been printed on can also be converted into vegetable parchment if treated in this way. The author also proposes to make parchment paper in endless lengths by connecting the alum and sulphuric acid bath with the paper machine.

How to Bleach Sponges.

The following minute directions are given for bleaching sponges to any shade from a delicate straw color to a snowy white. It is said that the texture of the sgonge is not impaired by its use, unless it is allowed to remain in the solution too long a time:—

Having made the sponges free from sand and calcareous matter by gently beat-

ing them, wash them in water, squeeze as dry as possible, and then place a few at a time in a solution of *permanganate of potassa*, made by dissolving 180 grains of the salt in five pints of water, and pouring a portion of the solution into a suitable glazed vessel. Let them remain a few moments until they have acquired a dark mahogany-brown color, when they are to be squeezed by hand to free them from the solution. They are then dropped, a few at a time, into a bleaching solution made as follows:

Hyposulphite of soda, 10 ounces; water, 68 ounces. When dissolved add muriatic acid, 5 ounces.

This solution should be made a day or more before being wanted for use, in order that the sulphur, which is precipitated by the addition of the acid, may be easily separated. This solution is poured off from the sulphur, and, if necessary, strained through a piece of muslin into a glazed vessel. [This portion of the process should be done in the open air or under a hood, where the offensive vapors of sulphurous acid are removed.] The sponges are allowed to remain in this solution for a few moments, occasionally squeezing them with the hand in order to allow the fluid to thoroughly permeate them, then squeezed out and washed in several waters to rid them of the sulphurous odors. After several washings they may, *if necessary*, be completely deodorized by a *very weak* solution of *bicarbonate of soda* (say 100 grains in five pints of water), and then washed through two or three more waters to free it from traces of alkali. [Much caution should be used in using this alkaline solution lest it neutralize the bleaching effect of the previous solutions.] When the sponges are *nearly dry* immerse them in a solution of glycerine in water, of the strength of a half ounce of glycerine in the pint; squeeze them by hand and let them dry in the air, but not exposed to *direct* sunlight. This will leave them beautifully white and soft to the touch.—*Druggists' Circular.*

Artificial Milk.

From the reports in circulation it would seem as if science were about to make cows superfluous. Artificial milk has been prepared by a French chemist from sugar, dried whites of eggs, carbonate of soda, olive-oil, and water. By substituting gelatine for the whites of eggs, and with less admixture of water, cream is obtained. Another chemist, Gaudin, in discussing the preceding suggestion, gives his testimony as to depriving fats of all unpleasant odor by mere subjection to an appropriate temperature. He also states that very good artificial milk can be prepared from bones rich in fat, by purifying this fat by means of super-heated steam, and combining the fat thus obtained with gelatine. This milk is, he says, almost like that of the cow; and when kept acquires first the color of sour milk, then that of cheese. The gelatine in it represents the caseine; the fat, the butter; the sugar, the sugar of milk. It serves for the preparation of coffee and chocolate, of soups and creams of excellent flavor, and its cost is but trifling.

To Remove Nitric Acid Stains from the Hands.

Wet the skin with sulphate of ammonia, to which has been added some potash lye. This changes the dead skin into a soapy mass, which can easily be removed with sand or fine pumice-stone.

Black Candles.

It has long been an object sought after by the manufacturers of wax, stearine, and paraffin candles to obtain a means of coloring them a jet black without interfering with the illuminating power. For funeral ceremonies, and on certain other occasions, there is a demand for black candles. This result can be attained by digesting with heat the substance of which the candle is to be made, for a few minutes, in a vessel in which has been placed some crushed anacardium nuts (*Anacardium orientalis.*). This fruit contains a

sort of juice of an intense black color which unites intimately with paraffin, etc., without in the least degree affecting the illuminating power.—Translated from the *Moniteur des Produits Chimiques.*

For Removing Hairs.

Prof. Bœttger recommends the following as safe: 1 part of crystallized sulphhydrate of sodium is rubbed to a very fine powder, and mixed with three parts of prepared chalk, The mixture keeps well in closed vials. Mixed with water and applied to the skin, the hair becomes soft in two or three minutes and is readily removed by water. A long application is apt to corrode the skin.—*N. Jahrb. f. Pharm., Amer. Jour. Pharm.*

Joining Rubber.

Rubber is easily joined and made as strong as an original fabric, by softening before a fire and laying the edges carefully together, without dust, dirt, or moisture between. The edges so joined must be freshly cut in the beginning. Tubing can be united by joining the edges around a glass cylinder, which has previously been rolled with paper. After the glass is withdrawn the paper is easily removed. Sift flour or ashes through the tube to prevent the sides from adhering from accidental contact.

To Cement Wood to Glass.

Make a solution of isinglass in acetic acid so thick as to be solid when cold. Heat this and apply it. This has been tested by fastening the end of a glass tube to pine wood; the wood gave way sooner than the cement.

Another Cement.

According to *Dingler's Polytechnic Journal*, a very strong, transparent cement, applicable to wood, porcelain, glass-stone, etc., may be made by rubbing up together in a mortar two parts of nitrate of calcium, twenty parts powdered gum arabic, and twenty-five parts of water. The surfaces to be united are to be painted with the cement, and bound together until completely dry.

Varnish for Labels.

At a recent meeting of the Newcastle-upon-Tyne Chemical Society, Prof. Marreco said that Prof. Markoe (of Boston, U. S.) told him, some months ago, that the practice in Boston was never to varnish a label for acid bottles, but to use paraffin instead. They had applied it to a large number of bottles in the college laboratory, and it answered perfectly. The only thing necessary was to brush the paraffin on as hot as possible, so as to get a thin, even coating; it looked as well as varnish, and stood a great deal better. It saved a good deal of trouble in sizing and varnishing, and five minutes after the bottle had been brushed it was ready for use. Dr. Lunge said that he had read some months ago, in a German journal, that the use of paraffin could be extended a great deal further; that instead of sealing the tops of bottles—sample bottles of bleaching powder, and for other purposes—it was very convenient to have a small porcelain dish with paraffin always ready, which could be placed upon a lamp, and, as soon as it was warm, to dip the top of the bottle in it, and that gave as good a sealing as sealing-wax, or better, and caused very much less trouble. It had also been proposed to use stoppers made of solid paraffin for caustic soda samples; but he did not like this, because they broke so easily. What he had found to answer perfectly well was to rub some heated paraffin upon the stoppers in place of tallow. He found it a great deal cleaner, and answering in every way for this purpose.—*Chemical News.*

Improvement in Bending Glass Tubes.

If the glass tube we desire to bend be filled with *sand*, and each end stopped to

prevent its escape on heating over a Bunsen burner, it will be found that the tube may be quite doubled if desired, a perfect curve being produced. In this way we may promptly produce accurate bends of any desired size in tubes of any bore without any previous skill in glass-working. Obviously, the principle depends on a uniform distribution by the sand of the pressure exerted. A similar plan is resorted to by metal-workers in bending tubes of lead.—*A. H. Gallatin, in Journal of Franklin Institute.*

To Fasten Leather on Metal.

To fasten leather upon metal, you should first wash the metal with a hot solution of gelatine, and steep the leather previously in a hot infusion of gall-nuts. Then press the leather upon the surface of the metal and allow it to cool, when it will be found to adhere so firmly that it cannot be separated without tearing.—*Boston Journal of Chemistry.*

Disinfection.

Pound the well-dried raw bean of coffee, and strew it over a moderately heated iron plate till the powder assumes a dark brown tint; it will then remove almost any noxious effluvium.—*Braithwaite, Mich. Union Med. Journ.*

Collodion-Cotton.

Prof. A. Vogel says, if the sulphuric acid employed in the manufacture of gun-cotton for collodion contains any considerable quantity of nitric acid, a smaller amount of saltpetre must be employed, otherwise the collodion-film made from it is *opaque* and unfit for photographic purposes. If the sulphuric acid is free from nitric, equal weights of acid and saltpetre are taken. When more than 30 grammes of cotton are prepared at once, its optical properties seem changed; the same is the case if ammonia instead of alcohol is used to wash out the last trace of acid.

NEW REMEDIES.

THERAPEUTICS.

ERGOT IN THE TREATMENT OF NERVOUS DISEASES.

Dr. Daniel Kitchen, Assistant Physician to the New York State Lunatic Asylum, makes, in the July number of the *American Journal of Insanity*, an interesting report of the action of ergot in certain nervous affections. He used the fluid extract prepared by Squibb, and the aqueous extract, or ergotine, made by Merck, of Vienna. The dose of the former is from one to two drachms; the latter from six to ten grains. One drachm of the alcoholic extract of Squibb's preparation is equal to about six grains of the ergotine. He also used a few ounces of a solid extract, made by Squibb, which is about equal in strength to imported ergotine. The full physiological effect of ergot will last from one-half to three-quarters of an hour.

"There is probably no condition so annoying to the patient as headache, and certainly it is the most common. In the following forms we have used ergotine with much benefit and comfort to the patient: 1. Headache, depending on plethora or fulness of blood; 2. Headache from anæmia; 3. Headache, depending on changes in brain substances and the membranes; 4. Epileptic headaches; 5. Migraine; 6. Headache, depending on disordered menstruation. The most common form of headache is the first, or that depending on a plethoric condition of the blood-vessels of the brain. Of course we cannot estimate correctly the amount of pain endured at each sickness, but it depends largely upon

the constitutional character and nervous susceptibility of the patient. In plethoric headaches the course is either very short (a few hours at most), or they last for some days. The pain is usually referable to the back of the head, and there is much throbbing of the temporal arteries. In this class of headaches we have used ergotine largely; about one hundred patients have been prescribed for, and in almost every instance relief was given in less than half an hour, and the attack thoroughly cut short.

"In headache from an anæmic condition of the brain the blood-vessels are usually lax, and as a consequence there is a slowness of the circulation. Ergotine contracts the blood-vessels, thereby giving tone to the arterial system; the blood is forced more quickly and regularly through the brain, and of course in greater quantity. Our cases of cerebral anæmia are comparatively few, and experiments are therefore limited; yet in those cases where we have had an opportunity of using it happy results have followed. In epileptic headaches and in epilepsy we have used ergot largely. In *petit mal* there are muscular twitchings, congestions of the face, suffusion of the eyes, and a rush of blood to the head. We have in many of these cases been able to ward off the *grand mal* by large doses of ergotine. We have often combined it with conium, and it seems in this combination to work even more satisfactorily than alone, which is chiefly due, we suppose, to the sedative effect of the conium. In migraine, or sick-headache, we have distended blood-vessels pressing on the ophthalmic division of the fifth nerve, thereby causing the pain; and, if we accept this theory, then ergotine, by contracting the blood-vessels, will relieve the headache. In headaches depending upon some disordered condition of menstruation, we usually have a fulness or congestion of the cerebral vessels; sometimes, however, it may occur from anæmia of the brain. In both forms the use of ergotine is beneficial."

Dr. K. concludes his paper with the following statements: "1. Benefit of combination with bromide of potassium in epilepsy; 2. It is apt to produce cramps and pain in the stomach, which is remedied by combination with conium; 3. In nervous diseases it soothes all renal irritation and catarrh of the bladder; 4. It dilates the pupil sufficiently to be noticed; 5. Increases both frequency and tension of the pulse; 6. Has no appreciable effect on the heat of the body; 7. In large doses it produces the same effect as conium, by inducing sleep; 8. Its beneficial action in delirium tremens, after bromide of potassium has failed; 9. It combines readily in the form of a pill with sulphate of quinine; 10. It is a cerebral sedative; 11. Ergotine possesses an advantage over the alcoholic extract in not producing any pain or cramps in the stomach, and is given in smaller quantity; 12. Ergot is

not likely to be adulterated, and we always secure an appreciable effect after its administration."

AN ADDITIONAL EFFECT OF ERGOT, OF IMPORTANCE TO OBSTETRICIANS.

WERNICH, in the *Centralblatt f. d. Med. Wissen.*, says that the results of a large number of experiments, and the frequent mention of a "distended bladder," occurring in the reports of post-mortem examinations, show that the fulness of the bladder found in patients under the influence of ergot is not merely an accidental concomitant of the exhibition of this drug. The explanation of this does not seem remote, since the strongly irritant action of the preparations of ergotine upon the sphincter vesicæ is not only a recognized fact, but one that is frequently availed of in therapeutics, in paralysis of the sphincter muscle after typhus, in wetting the bed in children, in the incontinence of the aged, due to simple weakness of the sphincter, in the paralysis of the same muscle in those suffering from paraplegia, etc. But from the circumstance that in animals used for experiments to determine the action of ergotine upon the uterus, in which the bladder, from motives of convenience, had been previously emptied, but yet soon after the administration of the drug was found full of urine, we suspected that in addition to spasm of the sphincter there was still another effect produced by the ergot." This suspicion was strengthened and brought almost to a certainty by the repetition of the same phenomena almost without exception; and, without going into the question whether the increased blood-pressure caused by ergotine is enough to account for the phenomena observed, Wernich feels justified in stating, in opposition to Drasche, that the fulness of the bladder observed after the administration of ergot is due not only to a retention of the normal amount of urine, but also to an increased amount of secretion of that fluid.

Two cases are adduced by Wernich in illustration of his views. The first was a primiparous woman in labor with twins. After the birth of the first, the bladder emptied itself spontaneously, the os uteri was fully dilated, and the head of the second child presented, but, owing to a cessation of labor-pains, ergot was given at intervals of half an hour during the next three hours. The uterus contracted fully, but the head did not advance. At the return of the doctor, the bladder was found very full. It was emptied, and almost immediately the child was born.

The second case was also a primiparous woman, in whom there had

been a complete cessation of the pains for some hours; and, as the patient and her friends had a great dread of the forceps, recourse was had to ergot, given in the same dose and at the same intervals as in the previously described case. After the second dose the pains came on, gradually increasing, but by the end of the second hour had not caused the head to advance. The bladder was seen to be greatly distended, and by means of the catheter a large amount of clear urine was drawn off, and at once the head advanced, the forceps were applied, and a male child of normal size extracted.

This is scarcely a matter for the obstetrician, as at all events, before any operative interference, the bladder would be examined; but it is worthy the attention of the assistants of the lying-in woman.

It would be advisable for them to use the catheter after a prolonged ineffectual administration of ergot, as it is quite possible that in many of these cases in which want of power has been attributed to the drug, a contrary verdict would have been rendered had the precaution to relieve a distended bladder been observed.—*Medical Times.*

CLINICAL USE OF BORAX.

Dr. Favara Adorni, believing, like Dumas, that the biborate of soda possessed anti-fermentive properties equal or superior to that of sulphate of quinine, or hyposulphite of soda, has experimented with the alkaline borates as succedanea to the latter salts in cases in which they are habitually prescribed, and seems to have been very successful. In the case of intermittent fever, he treated eighteen patients with borax, twelve being adults and the remainder infants. The dose varied from 0.80 to 1.30 grammes for the former, and 0.80 to 0.40 for the latter. The remedy was administered four times during the apyrexia in solution in coffee or sweetened water. The above dose may be increased without inconvenience, for Polli has observed that borax is a stable salt which circulates without modifying the course of the blood, and which is found unchanged in the urine, 150 to 225 grains having been taken without offence either to the sense of taste, or by its local or general action. Dr. Ayr has known a patient to take, by mistake, 375 grains without being incommoded.

However, M. Adorni, with the small doses above mentioned, has succeeded in curing fourteen of the eighteen cases, one patient being still under observation. The treatment lasted from two to four days. Twice the medicine produced loss of appetite and nausea which, however, ceased without the remedy being discontinued.

In a case of chronic blennorrhagia, for which balsams and astringent

injections had failed, the doctor obtained a remarkable success, after three injections only of the following formula—a modification of the collyrium of Dubois:—

℞ Borate of soda	grammes	1.60
Glycerine	"	6.
Distilled water	"	100.
Cherry-laurel water	"	.60

The fact that borax passes unchanged into the urine renders it serviceable in cases of vesical catarrh, when the urine is retained in the bladder and becomes putrid. By its antiseptic properties it arrests the fermentation, and modifies the state of the mucous membrane. M. Polli, of Milan, recommends it in these cases, and says that it has not the disagreeable taste of sulphate of soda, and, unlike the hyposulphite, does not provoke diarrhœa.—*Gaz. Med. Ital.* and *Lyon Méd.*

A NEW METHOD OF PRODUCING LOCAL ANÆSTHESIA.

Dr. Horvath, of Kieff, lately proposed in the *Centralblatt für die Medicinischen Wissenschaften*, a new method of producing local anæsthesia. If the hand be immersed for a short time in ice-water, severe pain is caused. But in experiments made in reducing the temperature of frogs by means of cold alcohol, Dr. Horvath found that no such pain was produced when the hand was immersed in cold alcohol, not even when the temperature of the alcohol was as low as 5° C. Glycerine was found to possess a similar property. Ether caused pain, and quicksilver more acute pain still, causing the speedy withdrawal of the finger when plunged into this liquid at a temperature of 3°. It was next ascertained that, when the finger was held for quite a long time in alcohol having a temperature of 5° C., no pain was experienced. Moreover, although the faintest touch was distinctly perceived in his finger, no pain was experienced from sharp pricks. This seemed to show that the application of cold alcohol has the effect of depriving the part of the special sensibility to pain without, however, impairing the delicacy of the general tactile sensation, which, as is well known, resides in the superficial integument. This apparent possibility of the artificial separation of these two nervous functions, viz., the tactile sensation, and the sensation of pain, and the temporary suspension of the latter, seemed important in a physiological point of view, and also of no small practical utility in allaying certain forms of local pain, more especially that caused by burns, and surgical operations. Dr. Horvath had an opportunity of testing the value of this application to burns on

his own person, as well as upon others, and not only was all pain instantly allayed, directly the part was immersed in alcohol, but it was found that the wound very speedily began to assume a more healthy appearance, the surrounding redness rapidly failing. These observations seem of considerable importance, and we commend them to surgeons, both in reference to burns and superficial operations.—*The Doctor.*

OXIDE OF ZINC IN INFANTILE DIARRHŒA.

In the *British Medical Journal* of July 12, Mr. Edward Mackey, M.B., recommends oxide of zinc in infantile diarrhœa, especially in those forms complicating nerve-troubles or hooping-cough. He points out that it has "tonic and anti-spasmodic as well as astringent qualities, a combination in a non-irritant substance exactly suited to many cases of the malady." It does not irritate, as chalk sometimes does, or gripe, as acids do occasionally, and is a better nerve tonic than bismuth. Mr. Mackey says that it has given him excellent results in all varieties of infantile diarrhœa, in conjunction with suitable diet. Dose, one grain for any age under two years, with a little syrup, mucilage, and dill-water, three or four times daily, not on an empty stomach. A larger dose may nauseate. He says that oxide of zinc will give us, in many cases, the maximum of good with least liability to harm,—an advantage to be desired, especially in out-patient and distant cases. Dr. Waring-Curran has referred to this use of the oxide of zinc in *The Lancet* of October, 1868, and Dr. Brakenridge, in *The Medical Times and Gazette* of February, 1873, points out its tonic and anti-spasmodic as well as astringent properties. He has tried it in twelve cases, in ages ranging from four to eighteen months. The form of administration was usually that of the powder, but it was also given mixed with gum-arabic and a slight addition of glycerine. The general results observed were:—1. That it moderated the diarrhœa quickly. 2. That vomiting stopped. 3. That digestion improved. 4. That intestinal hemorrhage was frequently arrested. 5. Teething was rather favored than otherwise. 6. That even where no change was made in the diet, and the other conditions remained the same, the treatment progressed favorably. 7. When, however, diet and regimen were carefully regulated, success was more rapid and decided.—*Med. Times and Gazette.*

Oxide of Zinc for Night Sweats.—This remedy has also proved valuable in controlling night sweats when sulphuric acid has failed. The *Pacific Medical and Surgical Journal* recommends its administration as follows:—

℞ Zinci oxidi, gr. xxx.; Ext. hyosciami, gr. xv. M. Facet pil. No. xv. Give one at bed-time.

A NEW METHOD FOR HEALING ULCERS.

Dr. Nussbaum (*Wien. Med. Presse*, May 4, 1873) claims to have successfully treated upwards of sixty cases of chronic, extensive, and otherwise intractable leg-ulcers, by the following simple procedure. It is at least worthy of a trial. The patient is first narcotized, and then around the ulcer of the leg or foot, a finger's breadth from its margin, an incision extending down to the fasciæ is made; numerous blood-vessels are divided, and a severe hemorrhage ensues unless a fine pledget of lint be packed into the cut and the entire ulcer strongly compressed. The packing with lint is also necessary to prevent union of the cut edges by the following day. Upon the second day the bandage and lint are removed; from then until a cure is effected a simple water-dressing is applied.

The author states that an astonishing change can be seen, even in the first twenty-four hours: the ulcer, which yesterday threw off quarts of thin, offensive, ichorous pus, furnishes to-day not more than a table-spoonful of thick, non-offensive, healthy pus. The old ulcer becomes rapidly smaller, healing from the margin towards the centre, and is healed in a short time, but the cut is changed into a broad circular sore, which also speedily cicatrizes.

The great diminution of the secretion, and other favorable changes occurring in the ulcer, find an explanation from the fact that the circumcision has divided dozens of large, abnormally widened blood-vessels. Time is thus given for the lessened nutritive material, which previously was carried off by the excessive secretion, to be transformed into cells and connective tissue; in other words, granulations are formed, which fill up and heal the deep ulcer.

Without claiming this as a radical method, the author assures us that the cure is much more rapid, and the cicatrix becomes more elastic and resisting, than in the ordinary means applied, which usually require so much time that the patients depart with half-cured ulcers, soon to find themselves in their previous deplorable condition.—*Medical Times.*

Treatment of Chronic Nasal Catarrh.—Dr. Whittaker (*Clinic*, July 12th, 1873) advocates the treatment of certain cases of nasal catarrh by pressure. He does it for the same reason that the surgeon uses pressure to remove stricture of the urethra. The constriction is usually found in the inferior meatus. Bougies of different sizes and shapes

are employed as the particular case seems to indicate. His success in the five cases thus treated has been very gratifying.

Aloes in Hemorrhoids.—Prof. Fordyce Barker, in the *American Practitioner*, says, on the treatment of hemorrhoids in pregnancy: "When hemorrhoids are developed during the latter period of pregnancy, the indications are obviously to counteract the constipation or the diarrhœa, and to stimulate and to restore the tonicity of the hemorrhoidal veins. The inquiry will then naturally suggest itself, have we any agent or combination of agents in the *materia medica* capable of effecting these results? I know of no article which so clearly and positively produces these two results as aloes, and on this I have mainly relied. I am well aware that the general voice of the profession is against the use of aloes when there is any tendency to hemorrhoids."

On the Resina Copaibæ as a Diuretic.—Dr. Wilks, of Guy's Hospital, speaks with the greatest confidence of the value of the resin of copaiba as a diuretic. The ordinary copaiba has long been known for its action on the kidney, and is occasionally used in dropsy, but the nauseous taste of the oleo-resin has almost forbidden its employment. The oil, separated from the resin, is officinal, and is often prescribed in gonorrhœa instead of the compound substance. It is thought that the oil acts more especially on the mucous membranes, and is therefore useful in affections of the bronchial, vesical, and urethral surfaces. If this be so it is equally certain that the diuretic properties reside in the resin. Dr. Wilks has found it very difficult for patients to take the ordinary pharmacopœial drug, and almost impossible to get general practitioners to sanction its administration in private practice; he therefore has substituted for it the simple resin, and finds it equally or more efficacious. He gives fifteen or twenty grains in mucilage and flavored water three or four times a day, and has had numerous cases showing its marked diuretic properties. There is now in Guy's Hospital a man who came in with ascites, and who, after taking numerous other remedies, was ordered the resin. The amount of urine was at once doubled in quantity, and now, after a few days, the fluid has almost disappeared. Dr. Wilks says he has lately had, as a private patient, a "drunkard builder," with cirrhosis of liver and enormous ascites, for whom he likewise prescribed the resin; a diuretic action was at once effected and the dropsy quickly disappeared. In heart cases, also, he has given it with great success. Lately there was in the hospital a girl with mitral disease and considerable dropsy, who took the usual medicines without effect, and was then ordered the copaiba. It at once produced the desired result, and the fluid was dispersed. Dr. Wilks states that he has often given the remedy and failed; but,

on the other hand, when it has succeeded, the result has been more striking than that arising from any other diuretic he has seen.

Catching and Curing Cold.—Dr. Rosenthal has published a work on the above subject which has been summarized by the *Journal of Materia Medica*, *British Medical Journal*, and others. He says: —"It is well known that when cold is applied to the surface of a healthy animal the cutaneous vessels contract. They thus prevent the blood from circulating in the skin, and, by confining it to the interior of the body, prevent it cooling, and preserve the temperature of the vital organs, unless the application of cold be continued for a considerable time. This is not the case, however, when the animal has been previously exposed to warmth for some time before. The cutaneous vessels become paralyzed by the heat, and remain dilated, even after the cold has been applied. The blood is thus exposed over a large surface, and becomes rapidly cooled, even although the temperature of the surrounding medium is not very low. In Rosenthal's experiments, animals were kept for a little while at a temperature from about 97° to 104° Fahr. The temperature of the animals themselves quickly rose during their confinement to 111° or 113° Fahr. After their removal, it not only sank to the normal, but even below it, so that an animal which was from 107.6° to 111° in the warming apparatus fell to 96.8°, and remained at that for several days, although the room in which it was kept was moderately warm. Confinement in a choky office, hot theatre, or crowded ball-room, will have a similar effect on man, and in the latter case it will be increased by the exercise of dancing. From such places people pass out into the cool open air, or will sometimes even purposely station themselves in a draught. The blood which is coursing not only over the flushed face, but through the dilated vessels of every part of the surface, is rapidly cooled below the normal, and, on its return to the internal organs, cools them much more quickly than it could have done had the person simply been exposed to cold without dilatation of the vessels by previous warmth. Rosenthal lays much stress on the great effect of sudden *cooling* in bringing on a cold, the sudden change in the temperature of the blood producing an irritating effect, and inducing inflammation in any weak organ in a way that a gradual alteration would not do. It would seem, however, that the alteration must be from a temperature above to one below the normal temperature of the blood, and not a mere reduction from one considerably above the normal to one at or near it. When much heated, we may stand for a short time in a cool atmosphere with impunity; but if we stand long enough to carry the cooling process too far and produce a shiver, we run a great risk of catching cold. The

fact that it is more dangerous to sit for a long than a short time in wet clothes, appears to indicate that a considerable and more gradual cooling, such as may then occur, will produce similar effects to a slight cooling suddenly effected by exposure to a cold draught after being in a warm room. The effect of a chill in causing inflammations may be partly due to the effect of cold on the tissues themselves, and partly to the hyperæmia which will occur in some parts when the blood is driven out of others by the contraction of their vessels. Rosenthal is inclined to ascribe the chief power to the former of these causes. Everybody knows the beneficial effect of cold baths, cold sponging, etc., in 'hardening' persons, as it is termed, so that those who employ them are able to face almost any weather, and to endure sudden changes of temperature without injury; while those who coddle themselves and stop every crevice lest a breath of air should blow upon them, are constantly suffering from colds. Rosenthal considers that this is due to the frequent application of cold water or cool air increasing the tone of the cutaneous vessels, so that they do not become so much relaxed by heat as to be unable to contract with sufficient force when necessary. The power of regulating the temperature is thus preserved, and the person prevented from catching cold."

A paragraph on the cure of colds has lately "gone the round." It is as follows:—

This troublesome affection (cold in the head) can be got rid of, according to Dr. Hager, without the use of the dry diet treatment, applications of nitrate of silver, etc. This affection is particularly troublesome, if not dangerous in the very young:—

Carbolic acid,	5 parts.
Alcohol,	15 "
Liquor of ammonia,	5 "
Distilled water,	10 "

Mix and enclose in a colored glass stoppered bottle.

The patient may inhale from the bottle, or by dropping some of the fluid on a cone of bibulous paper, keeping the eyes closed to avoid the fumes. The application is a little pungent at first, but the patient soon becomes habituated to it.

In reference to the above we may observe that it is poison, and, therefore, not perhaps to be trifled with in the manner indicated.

Dr. Channing, in the *Boston Journal of Chemistry*, calls attention to the danger of employing carbolic acid and ammonia in combination in the treatment of catarrh. The agents used separately (by inhalation) are frequently effectual in cutting short an incipient cold. The mixed solutions, however, produce decided narcotic symptoms,

which the doctor explains on the hypothesis that aniline is formed by a reaction familiar to the chemist. The above formula, originating in Berlin, has been quite extensively circulated in the medical journals. Dr. Channing has found carbolic acid alone so effectual that he thinks it hardly worth the while to risk the serious consequences which might follow from the addition of ammonia.—*The Doctor.*

ON HYPODERMIC AND PARENCHYMATOUS INJECTIONS OF ALCOHOL AND SIMILAR SUBSTANCES.

In a paper with the above title (Virchow's *Archiv*, vol. lvi., 1872) Schwalbe endeavors to confirm the opinion which he had already put forward that the effect of injections of tincture of iodine into the substance of a goitre depends principally upon the alcohol of the preparation. He tried simple alcohol injections with other tumors, and reports a case of lipoma which was reduced in size by such injections, in consequence of the formation of cicatricial tissue which they induced in it. The results also which are obtained by the subcutaneous injection of ergotine for aneurism and varicocele are referred by Schwalbe to the circumstance that the drug is used in such cases in an alcoholic solution with glycerine. In consequence of this, inflammation with subsequent cicatricial formation takes place, and thus a compression and obliteration of the dilated vessels is brought about. —*Centralblatt f. d. Med. Wissensch.*

TREATMENT OF CEREBRAL EXHAUSTION.

In his Croonian Lectures, lately delivered, Dr. Radcliffe, after describing the principal symptoms of cerebral exhaustion, as failure of memory, depression of spirits, increased or diminished sleepiness, unusual irritability, a continual craving for food or for stimulating drinks, lessened locomotive power, lessened control over the bladder, diminished sexual activity, inequalities of circulation, and aged aspect, disposition to tears, yawning, occasional faintness, epileptiform symptoms, or transitory hemiplegia, or coma, proceeds to consider its prevention and treatment. In diet he thinks that the present system of urging persons at all weakly, especially children, to eat as much as they can, may have not a little to do in causing the development of many nervous diseases. He is equally opposed to persistence in "training diet" and to Bantingism, believing that the nerve-tissues as well as others may be

effectually starved by excluding the hydrocarbons from the food. He further thinks that too much stress is ordinarily laid upon the importance of walking exercise; much walking, in fact, seeming to be no insignificant cause of the breakdown in the patient's health, and little or no progress is made until he begins to economize his strength in this direction. He is also disposed to maintain that rest from headwork may be too much insisted upon in cerebral exhaustion. He is satisfied he has often met with patients with jaded brains who have certainly let their minds lie fallow too long. Mere distraction is not enough. What is wanted generally, even at the beginning, is not that work should be given up altogether, even for a short time, but that it should be moderated in amount or changed. He is of opinion that the wakefulness may be much better combated by attention to the position of the head in sleep than by narcotics. Sleep in bed is, as a rule, sounder with a low pillow than with a high one. On the contrary, if there be undue sleepiness, the head should be kept high.—*British Medical Journal*, April 11, 1873.

On the Use of Dry-Powdered Blood.—Dr. de Pascale, of Nice, recommends dry blood in conditions of exhaustion as in phthisis, convalescence from fevers, etc.

"The blood of the ox, after being dried in a water-bath, is reduced into a very fine powder, and grated through a sieve. Dry blood can be taken for any length of time, being almost tasteless, and no repugnance is likely to be felt, as is often the case with raw meat. It can be taken as any common powder, mixed with soups, milk, marmalade, chocolate, or enclosed in a wafer.

In two cases I have given the powdered blood under the name of nutritive powders, mixed with a small quantity of pepsin; choosing that name lest ladies, startled by one more precise, might have difficulty in taking the medicine.

The quantity to be taken may vary according to the age, sex, or the state of health and digestive power of the patient. In general, I begin with thirty grains, which is increased according to circumstances; but the quantity must be left to the discretion of the physician who prescribes."—*Med. Press and Circ.*, London, Jan. 29, 1873.

Hyoscyamine in Spasmodic and Convulsive Neurosis, Mercurial and Senile Tremor, Tetanus, etc.—The last number of the *Bulletin Générale Thérapeutique* (Dec. 15, 1872), leads off with a long article upon this subject. The following are the conclusions arrived at:—

1. Hyoscyamine represents all the active principles of the drug

from which it is derived. Its fixidity of composition gives to the results obtained under its use a precision that cannot be secured by the drug itself.

2. Hyoscyamine should be administered at first in light doses (2 milligrammes a day) either in pill or by hypodermic injection. The dose may then be gradually increased to ten or even twelve milligrammes per day.

3. It should be continued, even though slight symptoms of toxic action present, as dryness of the throat, dilatation of the pupils, etc. But if these symptoms become grave, it should be suspended. These symptoms are fugitive, and disappear in the course of a few hours.

4. Hyoscyamine exercises on man a narcotic action. It is efficacious against pain and neuralgias in particular; but its efficacy is less than that of opium and belladonna.

5. This medicament exercises a favorable action in spasmodic and convulsive neuroses. It cures mercurial tremor even after every other remedy has proven futile. It produces a marked amelioration in paralysis agitans.

6. Its action is null in locomotor ataxia. In traumatic tetanus, although the patient died, it procured a decided remission in the symptoms, but the question of its use in this affection may not yet be regarded as settled, as new observations are required.—*The Clinic.*

Treatment of Chilblains.—Mr. Fergus recommends sulphurous acid in this affection. It should be applied with a camel's-hair brush or by means of a spray-producer. One application usually effects a cure. The acid should be used pure. A good wash for hands or feet affected with chilblains is, sulphurous acid, 3 parts; glycerine, 1 part; and water, 1 part. The acid will be found particularly useful in the irritating, tormenting stage of chilblains.—*Canada Med. Jour.* and *The Doctor.*

Treatment of Fissures of the Nipple.—In a paper by Dr. Créquey, fissures of the nipple are described as being of two kinds. First, those produced by violent suction on the part of the child; here the epidermis is raised and abraded, as if by a cupping-glass. In this condition of the nipple, the child should be allowed to suckle only when the breast is charged with milk. Second, at other times, a little of the milk lodges in the minute cracks at the base of the nipple, where it comes in contact with the secretions of the body and rapidly decomposes, thus acting as an active irritant of the skin, and in some instances inducing very extensive inflammation. As a preventive of cracked nipples, originating in this manner, the breast should be

bathed with warm water, wiped dry, and then anointed with the following ointment:

℞ Tannin, (1 *gramme*)..... gr. xv.
Glycerine, (10 *grammes*)..... ʒ ij.

This should be applied by means of a camel's-hair brush, after which the nipple should be protected with charpie, or a soft linen cloth. In these cases, the nipple-shield may be employed to advantage.

If the breast be distended with milk, relief may be afforded by the application of a large flax-seed poultice, taking the precaution to protect the nipple with a piece of soft leather.—*Gaz. des Hôp.*, 1873, p. 84.

Treatment of Chronic Diseases of the Bladder with Injections of Healthy Urine (*Lancet*, May 10, 1873).—Dr. T. Clemens proposes injections of fresh and healthy urine in the treatment of old disorders of the bladder, such as catarrh, chronic inflammation, gravel, etc. A young and well-fed individual should be made to micturate directly and slowly into a syringe which has been warmed to 90° Fahr., and the urine should then be injected into the bladder, previously emptied and washed out with tepid water. This should be done twice or thrice daily. He has obtained good results in this way after having failed in the use of all known remedies.

Ferric Alum in Purpura.—Ferric alum in powder, in doses of five to six grains three or four times a day, has been strongly recommended in the treatment of purpura hemorrhagica. Iron has long been used in the treatment of this affection, and with as much success as any other remedy, and this combination, which contains in addition the astringent properties of alum, cannot fail to be of service in this disease.

Nævi Cured by Monsel's Solution Applied Externally.—Dr. Geiger (in the *American Practitioner*, April, 1873), recommends the external application of equal parts of liq. ferri persulph. and glycerine to the surface of nævi and a little of the adjacent skin. In two cases in which the applications were made twice daily the nævi disappeared in less than a month.

Cold Infusion of Green Coffee in Gout.—Dr. Monchaux communicates to *L'Abeille Médicale* his experience in the use of cold infusion of green coffee in the treatment of gout. He directs his patients to take a tablespoonful of green coffee, place it in a tumbler, half fill the latter with water at the temperature of the atmosphere, and allow

it to stand for twenty-four hours. In the morning the liquid is to be swallowed, an equal quantity of water added, and taken the following morning; thus the same quantity of coffee will serve for two doses. The liquid thus obtained has little savor; it is more or less distinctly green according to the species of coffee employed. Dr. Monchaux does not explain the mode of action of the remedy upon the uric diathesis. He inclines to the belief that it acts against the effects of the disease rather than the disease itself, and that in order to prevent a recurrence of gout it is only necessary to make a daily use of the remedy indicated by him. He observes that the remedy is an old one, and that however difficult it may be to explain the precise action, the efficiency of the remedy is acknowledged. He had himself used it during three years, and with the result that his bi-annual attacks of gout had completely ceased.—*The Doctor.*

Local Use of Chlorate of Potassa in Open Carcinoma, by Dr. Burow, Sen.—This remedy has been used by him in five cases of cancerous ulcerations, one twenty-two centimetres in circumference, on the upper arm, three on the mamma, one originating from the periosteum of the upper maxilla and os zygomaticum, all of which, with the exception of two, had terminated in ulceration without previous operations. It is applied once daily, finely pulverized, over the entire surface of the ulcer. The results of his observations are that the energetic use of chlorate of potassa on these ulcerating cancers produces always diminution and shrinking of the exuberant granulations, resorption of the surrounding infiltrations, lessening of the secretions and of the irritability. He does not consider the value of the remedy established beyond a doubt by his yet limited observations, but calls the attention of the profession to his success, in order to insure further investigation.—*Berliner Klinische Wochenschrift*, No. 6, 1873.

In a later number of the same journal Dr. Dörger, of Hamburg, states that French physicians used the chlorate of potassa ten years ago, according to their statements, with the same effect upon carcinoma as Dr. Burow. The *Union Médicale*, 1863, No. 154, contains the results of the observations of Bergeron, Milon, and Blondeau, on the treatment of carcinoma by chlorate of potassa. They used very strong or concentrated solutions of this salt locally, and obtained cures within a few months. Débont's (*Bull. de Thér.*, lxvi., page 12, January 25, 1864; *Schmidt's Jahrbücher*, 1865, vol. i., page 170) and besides him Lebbane's, Cook's, Charcot's, Delpech's, and Wishon's observations coincide fully with those of Dr. Burow. (The conformity of these therapeutical results of so many makes further trials in the interest of the sufferers with this dreadful malady highly desirable.)—*Berliner Klinische Wochenschrift*, No. 12, 1873.

Incontinence of Urine.—Dr. Holmes Coote, of St. Bartholomew's, recommends for incontinence of urine in children, one minim of creosote three times daily, combined with assafœtida and rhubarb pill, of each two grains.

Radical Cure of Fistula in Ano.—Dr. Hute recommends the injection of a solution of iodine in ether instead of the ordinary tincture of iodine, on the ground that the ether, being more volatile, escapes more rapidly, leaving the walls of the fistula in contact with pure iodine. The reaction is insignificant, and there is no occasion for the patient to keep his bed.—*Le Mouvement Médicale.*

Simple Means of Removing the Pigment Markings of Syphilis.—The idea having occurred to M. Lauglebert, that by placing blisters over the deposits of pigment remaining after syphilitic eruptions and keeping up suppuration for a short time, a large proportion of the pigment might be removed and a light-red colored spot left as is usually the case after a suppurating blister, the experiment was tried on one case with very good success.—*Gaz. des Hôpitaux.*

Use of Gelatine Suppositories in Obstinate Constipation due to Accumulation of Fæces in the Rectum.—In the above cases, when there exists an accumulation of hardened fæcal matter in the rectum or colon, Dr. Nagel (*Allgemeine Wiener Med. Zeitung*, April 1, 1873) finds that when purgatives and enemata have failed, suppositories of gelatine constitute an easy, harmless, and effective means of removing the evil, and dispense with the use of the anal *curette*. The suppositories are made of brown gelatine. They are steeped in water for twelve hours, and being thus softened and enlarged are introduced into the rectum. By subjecting the patient to a suitable regimen, an evacuation of pultaceous matter is obtained in twenty-four hours. The author attributes these effects to the hygrometric properties of the suppositories.—*Lancet.*

Mr. Mackay states that a mixture of gelatine and glycerine is largely used in the preparation of suppositories in Edinburgh; and the *British Medical Journal* remarks (Feb. 15, 1873) that "suppositories made of gelatine are in such general use as to claim a place in the Appendix."

Mattison on Salicin in Obstinate Diarrhœa.—Dr. I. B. Mattison, writing in the *Phil. Med. and Surg. Reporter*, recommends, in cases of diarrhœa which prove utterly rebellious to ordinary treatment, salicin in the form of powder or pill (to children, preferably the former), in any appropriate vehicle, in doses of one-half grain every

four hours, to children under two years of age, and to adults after the following formula:—

℞ Salicin, ʒ i.
Fiat pil. No. 24.
Sig. Two pills every four hours.

"Its employment," he says, "is followed, after a short time, by a decrease in frequency of the evacuations, a return to their normal color and consistence, and by subsequent restoration to entire health."

Belladonna in Typhoid Fever.—Dr. Pilcher, Passed Asst. Surgeon in the Navy, says that in from twenty-four to forty-eight hours after the first administration of belladonna in typhoid fever, delirium, coma and subsultus vanish, and are succeeded by calmness and clearness of the intellect, by natural sleep, and complete control of all the voluntary muscles; diarrhœa is checked, and healthy and consistent evacuations are established.

Ozone in the Treatment of Disease.—At a recent session of the Vienna Society of Physicians (June 6), Dr. Lender recited cases of cures by ozone in the following instances as exhibiting the effect of this agent upon the central nervous system: 1. Rheumatic paralysis of the facial nerves after treatment by the constant and induced current had proven futile. 2. Disturbances of accommodation in the eye after diphtheria. 3. Effusion of serum into the cavity of the chest after inflammations of the pleura. The author exhibited at the same time a new, and since fully tried, method of developing ozone in close chambers from the permanganate of potash, peroxide of manganese and oxalic acid. Küchenmeister, of Dresden, contributed a paper also on the efficacy of properly prepared ozone in the treatment of sleeplessness, the asthmatic attacks of patients with dropsy of the chest, and in the treatment of other forms of dropsy.—*Allg. Wien Med. Zeit.*, June 10, 1873.

Transfusion of Milk in Cholera.—Dr. Edward Hodder calls attention to a means of treating cholera which has cured three cases of well-marked Asiatic variety. The treatment consists in the injection of milk into the veins.

The following is his method of procedure: He milks a cow over a gauze filter into a vessel heated up to 100° Fahrenheit. He then fills a syringe with the warm milk, opens a vein in the patient, and slowly injects 220 grammes. At the end of two or three minutes all the accidents of algidity disappeared, the body warmed up, and recovery ensued without accident. If 220 grammes do not suffice, he doubles the quantity.—*Gaz. Hebd.*

Arsenic in Diseases of the Liver.—Dr. de Moura, in the *Gazeta Med. de Bahaia*, records a case of liver disease, depending on amyloid degeneration of the organ through syphilitic causes, cured by arsenic. The patient was cachectic, pale, had polyuria, want of appetite, with a tumefied liver. Vegetable tonics, iodide of potassium, iron and mercury had failed to accomplish any good in this case.—*Southern Med. Record.*

Treatment of Diabetes by Arsenic.—Dr. Devergie (*La France Médicale*), in *The Doctor*, April, 1873, observes that cases of diabetes differ so much that they cannot be treated alike. In many instances, by the use of arsenic, without altering the diet, he has succeeded in getting rid of the sugar in the urine. His attention was first called to this treatment by accident. Called to treat a case of prurigo vulvæ, he prescribed arsenic. Soon he ascertained that the lady had glycosuria in addition to prurigo. Continuing the use of the arsenic, the lady was soon cured of both maladies.

Peroxide of Hydrogen is being prescribed in the treatment of diabetes, and of cyanosis, but, owing to the high price, perhaps, is but sparingly used.

Administration of Phosphate of Lime.—The importance which has been attributed during late years to the use of the phosphates in therapeutics has induced M. Coirre (*L'Abeille Médicale*) to consider the best method of administering phosphate of lime, which is too insoluble in most menstrua to allow its use in suitable doses. A small quantity is dissolved in the stomach by the hydrochloric acid of the gastric juice, and it is present in a state of solution in the blood, urine, and other fluids of the body. But when it is administered in the normal state, the greater part passes into the fæces and is lost. Satisfactory results can only be obtained by giving it in solution; and the author is of opinion that its best solvent is the one which it meets in the stomach, namely, hydrochloric acid. He says that if a chemically pure bibasic phosphate of lime be used, a few drops of hydrochloric acid in a tablespoonful of water will dissolve one gramme. By introducing phosphate of lime into the stomach under this form, M. Coirre considers that its absorption is facilitated in the highest degree, without impoverishing the gastric juice to the detriment of digestion.

General Uses of Direct and Induced Currents.—(*Irish Hospital Gazette*, July 1, 1873.) Walter G. Smith, M.D., in a lecture on the Clinical Uses of Electricity, thus tabulates the therapeutic distinctions between the two forms of current:—

DIRECT.	INDUCED.
To excite the nerves of special sense.	To stimulate the cutaneous nerves.
To reduce muscular spasm directly.	To antagonize muscular spasm by exciting the opposing muscles.
To produce chemical and thermal changes, *e.g.*, coagulation of blood, electrolysis, cautery.	
To stimulate muscles in certain cases.	To stimulate muscles in the majority of cases, and generally to obtain energetic peripheral excitation.
To relieve neuralgic conditions.	
To directly affect the brain and spinal cord, especially the latter.	

On the Use of the Constant (Voltaic) Current in Pains of a Pelvic Character.—Dr. William Stephenson, in the Transactions of the Edinburgh Obstetrical Society, observes:—

"One of the most important questions in practical medicine at present under discussion is that regarding the influence of the constant current of electricity over pain. Having used the constant current for two years in a large number of different affections, I would lay before you the result of my experience, in so far as it relates to certain classes of cases which come more directly within the domain of this Society. The first class to which I would refer is, the sacral and iliac pains which are met with so frequently in practice. Many of them are purely neuralgic, others muscular, while some are a combination of both forms. Their connection, in a large number of cases, with some abnormal condition of the pelvic organs is undoubted, but it is no less true that they often persist long after the primary local cause has disappeared.

"The difficulty which we have had hitherto to contend with is, that we did not possess the means of acting directly and locally upon the weakened state of the sacral nerves, which is the true cause of the suffering, or of determining the relations between the pain and the pelvic change. Here, however, the constant current of electricity steps in. Its effect in alleviating pain affords immediate relief, and by its restorative influence gradually removes the affection, while in it also we have the means of determining how far any local mischief is acting as an exciting cause. In some cases where a cure cannot be looked for, great relief to suffering can be given more quickly and with better effect than by the use of anodynes."

Treatment of Intermittent Fever by Eucalyptus Globulus.—Dr. Castan (*Montpellier Médicale*, June, 1873), in a further series of researches on forty-four cases carefully watched and analyzed, arrives at conclusions of considerable interest. These cases were treated with the extract; they were of a severe and well-marked character,

and gave thirty-three successes and eleven failures, or three successes out of four cases. In the previous year, employing the leaves and powder, he had only fifteen successes out of twenty-seven cases, that is to say, little more than a half. He recommends 0.40 *centigrammes* of the extract as an average dose. M. Gimbert, however, has succeeded in nineteen cases out of twenty-two by employing eucalyptol, which he considers the most efficacious preparation. Without believing that eucalyptus is likely to supersede quinine (especially in pernicious fevers), Dr. Castan regards it as a most valuable succedaneum. —*The London Med. Record.*

Abroma Augustum in Dysmenorrhœa.—B. B. Mohun Sircar, L.M.S., relates (*Indian Med. Gazette*, April 1, 1873) three cases of dysmenorrhœa successfully treated by the *Abroma augustum*. The roots, he says, are the officinal part of the plant; they are covered with thick, fleshy, easily-separable bark, rich with a viscid white fluid which contains the active principles of the plant. Mr. S. politely offers to supply a packet of the drug for trial to any of his professional brethren.

Penfold on the Treatment of Collapse by Injection of Ammonia into the Veins.—Mr. Oliver Penfold, Surgeon to the Bendigo Hospital, relates in the *Australian Medical Journal* for January, 1873, a case of extreme collapse following severe purging. The patient was lying on a bed; his eyes were sunken; his skin pale, cold, and clammy; the pulse was just perceptible by the most careful manipulation. He was hardly able to articulate above a whisper; indeed, he was rapidly dying. Strong stimulants, mustard poultices, and the external application of heat, were tried without effect.

"After waiting for an hour," Mr. Penfold says, "finding there was no improvement in his condition, and believing that in a few minutes he would be dead, and in spite of his friends' remonstrances to 'let him die quiet,' I injected 20 minims of a mixture of the strongest solution of ammonia with three times its volume of water into the left radial vein and connective tissue (into the latter by accident from want of sufficient assistance). In a few moments I thought the pulse was a little improved, and repeated the injection. After a short interval the man opened his eyes and tried to push away with his right hand the syringe inserted in the vein, and said, 'Dash it, leave off,' in a moaning sort of way. From that instant he began to recover, and was able to take a little beef-tea and brandy in the afternoon."

Strychnia in Amaurosis.—Dr. I. J. Chisolm, in the *New York Medical Journal*, February, 1873, reports a case of amaurosis in

which, beginning at the one-thirtieth of a grain of strychnia, he gradually increased until one-fifth of a grain was reached. This great increase of the dose was made within two weeks. For a time improvement was rapid, but then it ceased. The dose was again increased, and the increase continued till seventeen-thirtieths of a grain of strychnia was taken daily. With this dose he continued to improve for eleven weeks, when he was able to resume business. This case is selected from a large number to illustrate the reason why strychnia fails as a nerve stimulus in so many instances. The doses given are not large enough to produce the medicinal effects of the drug.

Sulphuric Acid as a Prophylactic in Cholera.—Dr. R. G. Curtiss, in *Medical Times*, July 12, 1873, advises the use of sulphuric acid as a prophylactic in cholera. His views are based upon observations made in the Philadelphia Hospital, during 1865 and 1866. He gave to all the inmates twenty drops of dilute sulphuric acid in four ounces of sweetened water. Each day, for six days before the use of the acid, there occurred an average of four new cases.

Four new cases occurred during the first twelve hours of administering the acid. After this, for one week, there were no new cases. Then, owing to lack of materials, the medicine could not be given for two days. At the end of this period two cases occurred. Then the acid was renewed, and continued for some time, but no more cases occurred. For various reasons the doctor thinks that these facts show that sulphuric acid did prevent the spread of cholera.

Nitric Acid in Uterine Disease.—Dr. Athill, in an article published in the *Obstet. Jour. of Great Brit.*, in June, says: "I have now given the result of my experience in the use of nitric acid as applied to the interior of the uterus, and in doing so have adhered rigidly to facts. I am not blindly wedded to the use of this one agent. On the contrary, I am at the present time giving a full and fair trial to the carbolic acid, as suggested by Dr. Playfair, and to other agents. As yet, I have obtained more satisfactory results from the use of nitric acid than from any other caustic, but I am satisfied that it is not suitable to all cases, and trust we shall yet be able to define clearly those cases to which the various agents are most suitable In concluding this paper, I should add that I almost invariably employ nitric acid in the treatment of granular ulcerations of the cervix uteri and cervical canal, with the best result."

Treatment of Gastralgia.—Dr. Joulin strongly advocates for the treatment of gastralgia (*La France Médicale*), 1. A poultice of ice for ten minutes, morning and evening, to the pit of the stomach. 2. A

mustard plaster to the same spot immediately on removing the ice-poultice, to be kept on as long as possible. 3. Pounded ice, to be taken morning and evening, a tablespoonful every five minutes for one hour. 4. A mustard bath with two pounds of mustard three times a week. The ice of the poultice is to be chopped up in small bits and enclosed in an india-rubber bag. The ice taken internally must be pounded with sugar, or it may be prepared by an ice-man to the taste of the patient. It must be swallowed down suddenly, and not kept in the mouth, as it would lose its coldness. If a tablespoonful should be too much at a time, several teaspoonfuls may be taken instead. The mustard bath Dr. Joulin regards as a powerful tonic.

Local Use of Chloral in Soft Ulcers and Ulcerated Buboes.—The *Lancet* for June 14th contains an interesting translation of a paper by Dr. Paoli, which appeared in the *Giornale Italiano delle Malattie Venerie* on the local use of chloral in soft ulcers and buboes. The chloral was used in solution, 10 parts of chloral to 30 of water, the healing process being rapid. This remedy is very useful in sores accompanied by much suppuration, and acts as an antiseptic.

Nocturnal Incontinence of Urine Cured by Chloral Hydrate.—Dr. Girolamo Leonardi has recorded in *Raccoglitore Medico* five new cases of the above, in which the use of a solution of chloral hydrate was entirely successful. The patients were all aged eight to ten, and the disease had resisted various means which had been previously employed. In all the cases the cure was effected most promptly, and was permanent. The dose was from seven to fifteen grains in about an ounce and a half or two ounces of water, taken at once or in two doses. In some cases the very first dose was successful, in others five doses were necessary to effect the cure. The drug was administered in the evening, two hours at least after food; and Dr. Leonardi strongly recommends that the patient should drink as little water as possible.—*Lancet.*

Injections of Apomorphia in Brain-Affections.—V. Gellhorn (*Allgem. Zeitschrift f r Psychiatrie*, Vol. xxx., No. 1), speaking of injections of apomorphia in brain-affections, says, after trying it in cases of acute and chronic mania, melancholia, etc., he finds it to be a valuable remedy, quick in its operation, and not affecting the appetite. No local irritation at the point of puncture followed.

CONIUM IN THE TREATMENT OF INSANITY.

Dr. Daniel Kitchen, Assistant-Physician at the New York State Lunatic Asylum, at Utica, states, in the *Amer. Jour. of Insanity*, No. 4, 1873, that during the past eighteen months he has been pursuing special investigations with conium in the treatment of insanity, aided by the thermometer and sphygmograph. The preparations used were the succus conii, an imported article prepared by Ransom & Co., and the fluid extract made by Squibb, of Brooklyn. The dose of the succus which will produce the physiological action is from a drachm to an ounce, according to the motor activity of the patient; men require larger doses than women. The dose of the fluid extract is from twenty minims to a drachm; twenty minims of the extract prepared by Squibb is equal to about a drachm of the succus conii. Some preliminary experiments upon a healthy person showed that in these doses conium lowers both the temperature and the pulse without any apparent effect on the respiration. In the investigations carried on in the State Lunatic Asylum its effects were carefully observed in 150 different patients, embracing cases of mania, melancholia and hysteria. The following physiological effects are observed in from ten to twenty-five minutes after a full dose is taken:—1. Suffusion of the eyes and injection of the conjunctivæ; 2, giddiness and sensation of weight along the orbit; 3, dimness of vision and dilatation of the pupils; 4, inability to sustain any mental effort; 5, languor, muscular weakness, with a strong desire to assume a recumbent posture; 6, a dragging sensation in the limbs; 7, pulse and temperature lowered; 8, gentle glow of perspiration over the whole body; 9, usually in half an hour the patient is asleep. It appears that upon the motor centres in the brain Dr. Kitchen has failed to discover any direct hypnotic effect, as in chloral hydrate, yet sleep follows very rapidly, as it almost always follows muscular relaxation, and in a natural way. When large doses are given the action upon the muscles is so quick that the patient is scarcely able to prevent himself from falling by supporting himself with his hands. Its effect is the counterpart of that of strychnine, quieting and conserving the nervous energy, and leaving the muscles to sink into rest. Dr. Kitchen has frequently observed the strong and powerful man, in mania and melancholia, after taking the full dose, become quiet, and this state is soon followed by prolonged sleep, from which he awakes much refreshed. Full doses, however, must be given, and the preparation must be good. Dr. Kitchen administered it in eleven cases of epilepsy of long standing, complicated with dementia. The fits were lessened somewhat in number and severity, though none were

entirely relieved. In several cases of facial erysipelas, with great restlessness, while bromide of potassium proved of little use, conium relieved pain, and sleep followed. According to Professor Mitchell, the addition of half a grain of blue-pill has a most salutary effect. A few cases of sciatica and of migraine, dependent on dysmenorrhœa, received great relief from conium. In hysteria with epileptiform convulsions, conium, given in full and repeated doses, afforded much benefit. An important point in respect to conium is, that if it does no good, it does little or no harm, as it has but little appreciable effect on any of the secretions; and as it does not act on the brain, it may be safely given in all febrile cases. The doctor gives an appendix of twelve cases, showing its effects in various forms of the disease.—*The Practitioner.*

Faradization in Lieu of Ergot in the last Stage of Delivery.—Whenever labor has fairly commenced, and the pains succeed regularly with an interval of about a quarter of an hour, M. Tripier, following the example of M. de Saint-Germain, faradizes the lumbar region by two excitors. In a very short space of time fresh activity becomes apparent in the uterine contractions, and the pains recur more frequently; the uterine contraction sbecome longer and more painful, and the dilatation of the neck is observed to take place with great rapidity. In all the cases in which it was tried, the expulsion of the placenta took place immediately after that of the fœtus, but in no instance did the child appear to have suffered any harm, although by its vigorous movements it clearly showed that it perceived and responded to the excitation of the current. M. de Saint-Germain passed the current for twenty minutes at a time, but M. Tripier finds this rather too long and only uses it for from five to ten minutes. For several years past M. Tripier has never attended a confinement without using such currents, passing them from the sacrum to the subpubic region, or even from the sacrum to the uterus itself, and all have borne it well. The delivery has been in all instances rapid, and there have never been any ill-consequences.—*Journal de Médecine* and *The Practitioner.*

Treatment of Enteric Fever by the Use of Internal Disinfection.—Dr. Stephen Skinner has followed the suggestions of Dr. Sansom, in treating twenty cases of typhoid fever with sulpho-carbolate of sodium, commencing with twenty grains every fourth hour, as a dose for an adult, and gradually increasing it during the next few days to the full dose of thirty grains. Beyond this he has found that he cannot go without producing cerebral symptoms as the result, which have, however, quickly disappeared upon the diminution of the dose.

Children, he has found, require much smaller proportionate doses than adults. When diarrhœa has been excessive he has combined with the remedy small doses of Batty's liquor opii sedativus until it has been quieted.

With the exception of one case, which terminated fatally on the 14th day of fever, all the remainder progressed favorably towards recovery.

The length of time the fever lasted in each case appeared to bear a direct ratio to the promptitude with which the drug was administered. In those cases in which he was able to exhibit the remedy during the period of incubation, the fever disappeared quicker than when it was given on the first or subsequent days of the disease. The remedy has likewise been given to people having premonitory symptoms of typhoid, occurring in four instances in houses where he was already in attendance, and in none of these cases did the disease develop, having aborted after six to ten days of discomfort; the bowels assuming their natural tone, the fæces their normal appearance, and the tongue becoming clean.—*The Practitioner*, September.

Therapeutical Uses of Iodoform.—Dr. Purdon remarks that during the last three years iodoform has been brought prominently under professional notice in France and the United States, and he has himself used it with considerable advantage in various affections. It possesses not only tonic and stimulant, but also alterative properties. The dose is from one to three grains, given in the form of a pill. Externally it may be applied as an ointment in the proportion of one drachm of iodoform to the ounce of lard, a few drops of rectified spirit being added to dissolve the iodoform. The ointment will be found useful to relieve the pain of cancerous sores; fissures, especially of the rectum; ulcers, and to allay excessive pruritus of the skin, as in prurigo and scabies. For a vaginal suppository iodoform has been recommended by Dr. Cutler, of Boston, in painful uterine diseases. When introduced into the rectum as a suppository it exercises upon the sphincters a local anæsthetic effect, so that defæcation has been performed unconsciously. In hemorrhoids and tenesmus it is useful. Moûtre's formula is —Iodoform, powdered, gr. xx.; cocoa butter, ʒ i.; melt and make into six suppositories. As a disinfectant its power has been ascertained by Righini. Certainly the odor is powerful and permanent, and may be compared to that of saffron. For ulcers the iodoform ointment is serviceable, especially when they are painful and indolent. Moreover, Dr. Izard has experimented with iodoform in the treatment of venereal ulcers—such sores it heals and cicatrizes rapidly. According to the same author, if iodoform be sprinkled upon a soft chancre, it heals quickly and without pain; moreover, it

arrests the progress of phagædena. M. Dumarquay thinks highly of this remedy, whilst Dr. Stiles recommends it as an addition to the ordinary plasters and ointments for syphilitic periostitis. Dr. Gamberine, at the hospital of St. Opsola, Bologna, treats all cases of soft chancres with iodoform—two drachms and a half to an ounce of glycerine. This remedy he has found highly successful. For burns, scalds, and painful boils, the application of an ointment containing thirty to forty grains to the ounce is recommended as a good anæsthetic. Internally Dr. Purdon finds that a grain of iodoform with two grains of reduced iron, given in form of a pill twice or thrice daily, a most excellent remedy for neuralgic and chronic rheumatic affections. In scrofulous complaints, such as glandular enlargements, it may be prescribed both locally and constitutionally; and its benefit will not be considered surprising when we remember that iodoform contains 90 per cent. of iodine. Dr. Purdon states that in a case of a young lady of sixteen who was suffering from an enlargement on one side of the neck, and who had gone through the usual routine treatment of iodine and its various preparations, he prescribed iodoform and iron and iodoform ointment. The affection is now rapidly disappearing. The following are some of the diseases in which he has given iodoform a trial:—At the Belfast General Hospital, in several cases of phthisis, in the following way:—Iodoform, sixteen grains; essence of aniseed, one drachm; cod-liver oil, eight ounces; mix; dose, a tablespoonful twice daily after food. Also in neuralgia. Given with iron in chronic rheumatism, chlorosis, anæmia; and as a suppository in the vagina in cystitis. At the Belfast Hospital for diseases of the skin, iodoform has been prescribed locally in prurigo, in pruritus ani, in cancerous ulceration and painful ulcers of limbs. In phthisis the remedy in the second stage of the disease checks the night-sweats and relieves the hacking cough. Moreover, the cod-liver oil agrees better with the stomach when thus combined. In neuralgia it is often curative when other remedies have failed. It acts better when combined with reduced iron.—*The Practitioner.*

Magnesia as a Dressing for Ulcers.—Dr. Ohlyer advocates in the *Algem. Med. Cent. Zeitung* the use of magnesia, which he has found very serviceable in the dressing of ulcers in which fermentative processes retarded healing. The magnesia acts by neutralizing the acids which may be present; prevents the access of oxygen to the surface, and protects the granulations.

The author uses it especially in—1, atonic sores; 2, cases in which the skin is deprived of epidermis and in which suppuration is imminent; 3, painful and inflamed sores; 4, wounds which require stimulation or to be protected from the air, or in which suppuration

should be diminished or modified. Dr. Ohlyer has also employed it with good results in erysipelas of the face.

Subcutaneous Carbolic Injections in Intermittent Fever.—M. Déclat, at a meeting of the Academy of Medicine (*Gazette Médicale*, Dec. 28), stated that, in cases of intermittent fever, he makes, on the first day of treatment, four subcutaneous injections of 100 drops of a one per cent. solution of carbolic acid; the next day three; the third day two. The first operation, says the author, always diminishes the fever, and sometimes cures it; the second is sometimes a work of precaution; and the third is so almost always.

Guarana in Sick-Headache and the Excitement of Epilepsy.—Dr. W. Macdowal, of Edinburgh, contributes an article to *The Practitioner* of Sept. on the effects of this drug. He had uniform success in relieving sick-headache in a number of cases, the dose being from half to one drachm, and in some cases of excitement due to epilepsy a drachm of drug would produce pallor of the face and quietude for one to two hours, but the effect was transitory and by no means equal to that of ergot. In experiments upon himself and other healthy persons, Dr. Macdowal observed that guarana will completely prevent the feeling of fulness of the head, lassitude and sleepiness following a full meal.

Transfusion in Leukæmia.—A patient in St. Bartholomew's Hospital, suffering from leukæmia and hypertrophy of the glands, has twice had blood transfused into her veins. The results of the operation are not yet published. They will probably appear in the reports of that hospital. The case is under the care of Dr. Andrew and Mr. Callender.

The Effects of Mercury on the Liver.—The experience of Bennet and others, seeming to indicate that mercurial agents have no effect in stimulating the liver and promoting the secretion of bile, are so directly in opposition to the universal experience of medical practitioners, that the experiments of Stricker on this subject are of unusual interest as going to confirm the ancient belief. A part of his plan was the introduction of a canula into the common bile-duct, through which the secretion was made to flow. All circumstances which caused hyperæmia of the liver increased the secretion of bile, and all circumstances causing anæmia had an opposite effect. Purgative medicines, including calomel, materially increased the discharge of bile.—*The Lancet.*

Treatment of Chronic Adenitis.—M. Demarquay thinks that cases of chronic suppurating inguinal glands, obstinate to all forms of

medication, should be treated by extirpation. But as extirpation by the knife is apt to be followed by evil results, he prefers to have recourse to caustics. He advises an incision in the midst of the tumor parallel to the fold of the groin, and sufficiently long to lay open all the indurated parts. Two days afterwards he introduces arrows of Canquoin's paste beneath each ganglion and in its interior, taking the utmost care to circumscribe their action in every way. If it be impossible to reach all the ganglions affected, a second application is necessary. On the second or fifth day, according to the size of the tumor, M. Demarquay removes the caustic, if it have not fallen itself. It is then intimately mixed with the tissues upon which it exercises its action. Should any nodosities still remain, the operation must be renewed.

Caustics do not, as has been stated of them, leave deforming cicatrices; the chloride of zinc does not act upon the skin, and after the use of the agent the surface shows only a line as if by incision with a bistoury.—*Gaz. des Hôp.*, July 12, 1873.

Glycerine of Borax in Facial Erysipelas.—Prof. D. M. Salazar, of the Hospital Naçional, Madrid, reports that he has cured eight cases of facial erysipelas in forty-eight hours by this remedy. He applied the solution by means of a brush and covers it with a mask of raw cotton. After twenty-four hours all the symptoms, local and general, were notably diminished, and the next day all the phlyctenulæ had disappeared, and desquamation was commencing. All medication was then discontinued, except that a decoction of sambucus and althea was used as a wash to favor the latter process.—*Medical Press and Circular.*

Digitaline in Albuminuria.—M. Bouchard, at the Société de Biologie, June 21 (*Gazette Hebdomadaire*, June 27) called attention to the toxic effect of digitaline on albuminuric individuals. The elimination of poison by the kidneys becomes very difficult or impossible, and digitaline produces toxic phenomena. This observation is experimentally confirmed, as M. Claude Bernard pointed out, by the fact that curare absorbed by the stomach is gradually eliminated by the kidneys and produces no toxic phenomena; but if ligature of the arteries of the kidneys be performed, the animal dies as from the effect of the curare, and the poison is not eliminated. M. Charcot observed that clinically this observation is in accord with that of English physicians, that opium administered in ordinary doses produces toxic phenomena; the same thing occurs with other medicines; the absorption of essence of turpentine does not produce characteristic odor of violets in the urine of albuminuric persons. The discussion led back to a patient of whom

M. Bouchard had spoken at two previous sittings of the society. This patient died of uræmia; his blood contained seventeen times more urea and three times more extractive matter than exists in normal urine.—*London Medical Record.*

Iodine in Eczema of the Genitals.—Dr. Montmeja, of St. Louis Hospital, Paris, has recorded some cases of eczema occurring upon the external genital organs, in *La France Médicale*, July 6th. In some of the cases tincture of iodine has been the chief local application, and achieved a cure of the disease in two months. Beyond this he has prescribed daily the following as a lotion to allay the itching in affected part:—

Corrosive sublimate.....	2 parts.
Water.....	500 "
Alcohol.....	A sufficient quantity to dissolve the corrosive sublimate.

Bromide of Potassium in Angina Pectoris.—In a memoir lately presented to the Society of Medicine of Antwerp, Dr. Papilland related various cases of angina pectoris in which the use of bromide of potassium afforded the best results. He begins with half a drachm of the salt, daily, and increases the dose by half a drachm weekly until he reaches the dose of two drachms. Generally the intensity of the fits rapidly abates, and recovery takes place after two or three months. —*The Lancet.*

Quinine in Hay-Fever.—Several persons have reported favorably of the use of quinine applied either in solution or in the form of a snuff to the mucous membrane of the nasal passages, for the relief of autumnal catarrh.

Cure of Chronic Pharyngitis by the Galvano-Cautery.—(E. Michel: *Deutsch. Zeitschrift für Chirurgie*, Band ii., 1872, 154–164.) The larger and smaller circumscribed hyperplasiæ of the mucous membrane which characterize granular pharyngitis are with difficulty healed by the ordinary methods resorted to (nitrate of silver). The author cauterizes quite superficially these granular enlargements with a galvano-cautery, and claims to have effected a cure in all cases with but three or four applications. The galvano-cautery thus operates more quickly, and at the same time is less painful, than the nitrate of silver and other caustics. For the lateral portions of the naso-pharyngeal space the laryngeal or rhinoscopic mirror must be employed.—*The Doctor.*

Prophylactic Use of Cold Water in Parturition.—Dr. C. C. Furley (*Pacific Medical and Surgical Journal*) says that in nearly one hundred and fifty labor cases he has in every instance taken the patient from bed immediately after the completion of labor and given her a sitz-bath, of the ordinary temperature, for five minutes at most. The bath is repeated every day, and the practice has resulted, he thinks, in an immunity from puerperal troubles which are induced by the retention of lochial discharges.

Caffeine.—Dr. H. S. Purdon (*The Doctor*, Nov. 1) has been lately trying the hypodermic injection of caffeine in neuralgia from both functional and organic causes. Amongst his patients at the Belfast General Hospital was a case of "central neuralgia," and which had resisted all plans of treatment. Under the daily hypodermic use of caffeine, commenced in half-grain doses, increased to one grain dissolved in tepid water, the most satisfactory results were obtained. Caffeine is superior to morphia in never producing any sickness, which is so common when morphia is used hypodermically in any large dose.

Turpentine Stupes in Tonsillitis.—Dr. S. H. Roberts (*Leavenworth Medical Herald*, April, 1873), strongly recommends the use of turpentine externally in tonsillitis. He folds flannel to four thicknesses, wrings it out in hot water, and pours oil of turpentine over a spot of the size of a silver dollar. The flannel is then applied over the sub-parotid region, and the fomentation continued as long as it can be borne. After removal a dry flannel is applied, and the same region is rubbed with turpentine every two hours. This application is continued daily till resolution occurs. Dr. Roberts believes, from the evidence of his long experience, that, thus applied early in the disease, the oil of turpentine has almost a specific effect in tonsillitis. That its action is not simply that of an irritant he has proved by employing mustard, croton oil, tincture of iodine, etc., in the same class of cases. They always failed to diminish the inflammatiou of tonsils, while the turpentine succeeded.—*London Medical Record.*

MATERIA MEDICA.

ON THE SALTS OF IRON AND ON A NEW SERIES OF TASTELESS IRON COMBINATIONS.*

BY J. CREUSE, OF BROOKLYN, NEW YORK.

It is not my intention here to treat on the medical properties and uses of ferruginous compounds as a class; this has been done before me by more competent persons. My purpose is only to discuss the relative physiological and chemical properties of the various iron combinations and describe a new series of tasteless ferruginous compounds.

Iron has been used in medicine, it may be said, from time immemorial. Metallic iron, green copperas, iron rust, carbonate of iron, bole armenia, etc., are mentioned in the oldest authors on medicine and pharmacy. It seems, also, that in former times little importance was attached to the peculiar forms in which iron was administered. Some fifty or sixty years ago, however, a decided preference began to be shown for metallic iron, finely comminuted, and for the proto-salts of iron. It was thought then that the easy solubility of those preparations in the stomach was a great advantage, and that theory gave rise to a number of officinal remedies like iron by hydrogen, Vallet's mass, proto-iodide of iron, etc., well known to pharmacists. But of late years, especially since the discovery of citro-ammoniacal pyrophosphate of iron by Robiquet, my old master, salts of sesquioxide of iron have been steadily growing into favor. It has been argued, with reason, that since iron in the human economy is invariably found in the shape of sesqui-salts, such compounds should be preferred to all others when iron is indicated. I may add, also, that it is always in the form of sesqui-salts that iron exists in all animal and vegetable substances which compose human food, and that metallic iron or its proto-salts cannot be mixed with the simplest aliments without com-

* Read before the Alumni Association of the New York College of Pharmacy; published in the annual report and reprinted in the New York *Druggists' Circular*.

pletely decomposing them. Protoxide of iron is as unyielding as it is unstable: when you have combined it with strong acids you can go no further with its salts; you can do nothing with them, not even make an alum. Sesquioxide of iron, on the contrary, is a perfect Proteus; sometimes a base, sometimes an acid, it is always ready to enter into some combination or other on the slightest provocation.

In a paper published some years ago, I demonstrated that nearly all the insoluble sesqui-salts of iron could be combined with the alkaline citrates, forming soluble and tasteless compounds, to which I gave the name of quadruple citrates. Since then further experiments have shown me that other vegetable salts, besides the citrates, possess also the same property, and that not only the insoluble but also the soluble sesqui-salts of iron could form similar combinations.

In other words, I may lay down this rule: *All the salts of sesquioxide of iron without exception, soluble or insoluble, form combinations with all the alkaline citrates, tartrates and oxalates.* Such combinations are invariably green, whatever may be the color of the iron salt; they are all soluble in water, nearly insoluble in alcohol; they are all free from ferruginous taste, all perfectly stable, and miscible with preparations of Peruvian bark without decomposition. In all of them the presence of iron is so disguised as not to be detected by chemical reagents, unless after the addition of strong acids or sulphuretted hydrogen, both of which destroy the combination.

In other papers I have detailed the soluble compounds obtained in combining the phosphate, hypophosphate, valerianate and arseniate of iron with the alkaline citrates. In this I will merely describe the tasteless combinations of the alkaline citrates with iodide, chloride, sulphate and nitrate of iron.

TASTELESS IODIDE OF IRON.

This is no doubt the most important of the whole series, both therapeutically and chemically: therapeutically, because iodide of iron is admitted to be the best of all iron combinations; chemically, because all the reactions happening during its preparation are so remarkable and so easy to follow with accuracy as to be likely to give a key to the real composition of the rest of the series—a result which can hardly be obtained with any of the other similar combinations.

The salt is obtained in the following manner: 126.3 grs. (1 eq.) of iodine are first combined with metallic iron, in the usual way to obtain the proto-iodide of iron; this is filtered, and 63 grs. ($\frac{1}{2}$ eq.) of iodine are dissolved into it. Then, a solution of 201 grs. (1 eq.) of citric acid saturated with a fixed alkali, such as potassa, for instance, is added by small portions to the sesqui-iodide of iron. The fer-

ruginous solution, which is at first of a ruby red color and has a strong smell of iodine, becomes lighter by degrees, till, as the last drop of citrate is added, it takes a bright apple-green color; at the same time, all smell of iodine and all taste of iron have disappeared; the solution strikes no color on starch paper, and gives no precipitate with either tannin or ferrocyanide of potassium. It may be then evaporated at a low heat, with gentle stirring, to dryness, when it gives a green mass formed of very small acicular crystals, looking somewhat like cauliflowers. It is tasteless, perfectly stable, unless exposed to direct sunlight, and may be exhibited in the shape of syrup, elixir, solution, tincture, pills, etc. The dose of it need not be more than one-half of that of the proto-iodide of iron, as it is absorbed much more readily.

Chemically, this iodide of iron seems to be a combination in which sesqui-iodide of iron plays the part of an acid and the alkaline citrate that of a base; but the subject requires further investigation before it can be decided with complete certainty.

The other alkaline citrates may be used instead of citrate of potassa; similar combinations may also be obtained with the alkaline tartrates, oxalates, and malates, but none are so tasteless, and especially none so *stable* as the one just mentioned.

I must add a few words on this subject, which is a most important one, for the same remarks may be applied to all the other analogous iron combinations, pyrophosphate included. On reading the above process, some may think that, after all, the product is only a mixture of citrate of iron, iodide and iodate of potassium. But, aside from the fact that the different ingredients are not in proportion to form such combinations, chemical tests show that such is not the case. Citrate of iron, for instance, is of a ruby red color and turns immediately ink-black on the addition of tannin, while tasteless iodide of iron is bright green and is not colored black by tannin, but only turned to a light purple hue, after some time. Iodide of potassium dissolves iodine freely; the new salt dissolves it but sparingly, unless when in a concentrated solution. Iodate of potassium is colored red by solutions of morphia; no coloration is produced by them in solutions of the new salt. This last reaction is important, as iodate of potassium is deemed poisonous by some physicians.

TASTELESS CHLORIDE OF IRON.

Sesqui-chloride of iron, the salt which enters in the preparation generally known as tincture of muriate of iron, has the property of forming combinations precisely similar to those of the sesqui-iodide. If an alkaline citrate be added to a solution of sesqui-chloride of iron, in the proportion of two equivalents of the former to each three

equivalents of chlorine, a new salt will be obtained of a green color, quite tasteless, and miscible with vegetable preparations such as infusions of bark, quassia, etc., without change or discoloration.

This tasteless muriate of iron may be dissolved in diluted alcohol in the proportion required by the Pharmacopœia of the United States; it forms, then, a tincture of muriate of iron, which is as superior to the old one as a civilized man is above a barbarian. Its effects, I know, from experience, are fully equal to those of the officinal tincture.

I cannot give the exact weight of citric acid required for a given quantity of the officinal tincture of muriate of iron, on account of the great variation in the strength and acidity of that preparation, but, on an average, 90 to 100 grains of citric acid saturated with either soda or ammonia will answer for one fluid ounce of the tincture. This is to be added to the iron solution before the alcohol, and the alcoholic strength of the tincture, when finished, must not be more than 30 or 40 per cent. instead of 70 per cent. as usual.

The sesqui-sulphate and the sesqui-nitrate of iron form also combinations precisely alike those described above, but present no special interest which entitles them to more than a simple mention.

All these new combinations, however, lack the property of coagulating the blood, and for that reason cannot be used as styptics in cases of hemorrhage, etc. The old officinal preparations will have to be retained for external use, the only thing they are fit for in a civilized community.

NOTE.—The tasteless iodide of iron has been patented, but with no intention of interfering with any druggist who wishes to make it himself for his own dispensing.

"PITURI;" A NEW NARCOTIC.

DR. G. BENNETT, writing in the *New South Wales Medical Gazette*, vol. iii., No. 8, May, 1873, some notes on Queensland, says that Mr. Hill gave him a preparation obtained from the leaves of a plant named by the aborigines of the interior "Pituri." It was obtained from the natives by Mr. James Gilmour when in search of Dr. Leichhardt, in the form of dried leaves, and was used by them as a stimulating narcotic, in a similar manner to the betel of the East, and forming a substitute for tobacco. It was erroneously labelled on the bottle containing the preparation "Pituri Oil," for, on examination, it was found to be spirituous, as if the leaves had fermented in the act of distillation. The botanical character of the plant could not be ascertained, from the leaves received being dried and in so pulverized a state that a per-

fect leaf could not be found. Mr. Hill stated that he found that the effect of taking a teaspoonful of this liquid in a glass of water was to produce a burning sensation in the stomach, followed by vomiting and giddiness.

The following is an abstract of a paper read before the Queensland Philosophical Society, March, 1872, on the Pituri, by Dr. Bancroft:—

"On February 9th of this year I obtained from Mr. Gilmour a quantity of dried leaves and the particulars here narrated, of a plant used by the natives as a stimulating narcotic. These leaves, called 'Pituri,' were obtained in the neighborhood of the water-hole Kulloo, eight miles beyond Eyre's Creek.

"The use of the pituri is confined to the old men of a tribe called Malutha, all the males of which tribe are circumcised.

"The pituri is carried in neatly-made oval-pointed bags, specimens of which Mr. Gilmour has brought.

"The old men, before any serious undertaking, chew these dried leaves, appearing to use about a tablespoonful. A few twigs are burnt and the ashes mixed therewith. After a slight mastication, the bolus is placed behind the ear, to be again chewed from time to time, the whole of which is at last swallowed. The native after this is in a sufficiently courageous state of mind to fight or undertake any serious business.

"One old man, with whom Mr. Gilmour and party fell in, refused to have anything to say or do until he had chewed the pituri; after which he rose and harangued in grand style, ordering the explorers to leave the place. The pituri caused a severe headache in persons who tried it. The dust given off in examining the leaves causes sneezing.'

The above is the information supplied by Mr. Gilmour.

Mr. Wills' diary from Coopers' Creek homeward (p. 283) has the following:—"May 7, 1861. In the evening various members of the tribe came down with lumps of nardoo and handfuls of fish, until we were positively unable to eat any more. They also gave us some stuff they call bedgery or pedgery; it has a highly intoxicating effect when chewed even in small quantities. It appears to be the dried stems and leaves of some shrub.

"The pituri consists of leaves broken into small particles, and mixed with it acacia leaves, small dried berries containing reniform seeds, and unexpanded flower-buds of the shape of a minute caper."

After describing in detail some experiments he made with an infusion of the pituri, Dr. Bancroft thus enumerates its effects:—

"1. Period of preliminary excitement from apparent loss of inhibitory power of the cerebrum, attended with rapid respiration, in cats and dogs, without vomiting and profuse secretion of saliva.

"2. Irregular muscular action followed by general convulsion.
"3. Paralysis of respiratory function of medulla.
"4. Death, or
"5. Sighing inspirations at long intervals.
"6. Rapid respiration and returning consciousness.
"7. Normal respiration and general torpidity, not unattended with danger to life."

The poison, given by the mouth, acts with less vigor; when it is injected into the intestines, the results are more certain. The animal has a longer stage of excitement, the convulsive fit is not so severe, and recovery is more certain. Torpidity remains for some hours.

A quarter of a drop injected under the skin of a rat causes excitement; the animal starts with slight noises, may fall over a few times from very strong muscular irregularities, remains excitable for some time, then gradually becomes torpid.

In small medicinal doses we may expect to find the period of excitement and the torpidity to be the only marked symptoms. In cats and dogs the excitement is not marked, but vomiting of a violent kind occurs.

Some leaves of a tree of the natural order Lauraceæ, and of the genus Tetranthera, used medicinally by the aborigines of New South Wales, were given to Dr. Bennett, which had been brought from the Bogan and Darling, where they are smoked by the aborigines for pains in the head and other ailments. It is named by them Yarran. The leaves have also been smoked by Europeans, and found very beneficial in cases of asthma. The tree grows from twelve to fifteen feet high; the wood is hard and used by the aborigines for clubs.

The editor of the *New South Wales Medical Gazette* adds, that at the Cape of Good Hope is a composite plant, the Parchonanthus camphoratus, Linn., the leaves of which, when dried, are smoked by the Hottentots and bushmen instead of tobacco, exhibiting slight narcotic effects. In the form of infusion, they promote perspiration, and are said to be useful in spasmodic asthma. The Wild Dagga (Leonotus leonurus, R. Brown), which bears very beautiful flowers and belongs to the order Labiatæ, is abundant at the Cape, and is also smoked by the Hottentots instead of tobacco, with narcotic symptoms similar to the preceding.—*London Medical Record.*

A NEW VARIETY OF OPIUM.

M. Charles reports that he was requested to determine the value of a specimen of a new variety of opium which has been met with

in commerce for some time, and which was said to be obtained from Persia. This opium occurs in the form of conical cakes weighing about a pound avoirdupois, partially covered by the remains of poppy leaves. It is free from seeds of Rumex; its odor differs from that of Smyrna opium, being rather comparable to that of green coffee, and when it is heated an odor of chocolate is exhaled. It is soft like ordinary fresh opium, the softness being due to 5.6 per cent. of moisture. When well dried it is easily powdered, but it is slightly deliquescent. The paste is of a fawn color, and does not darken upon exposure to the air; and when examined by the naked eye or with the aid of a glass appears fine and very homogeneous. It mixes freely with cold water, without requiring to be much worked up in the liquid, which it only slightly colors.

Whilst Smyrna opium usually yields 49 per cent. of aqueous extract, this variety yields 52 per cent. In this operation it always presents a remarkable peculiarity: when two-thirds of the water has been evaporated in a water-bath, successive crystalline crusts are formed in such a manner that if the liquor be left to cool, a nearly solid mass results, in consequence of the interlacing of the crystals. By treating such a product with water, M. Charles separated 1.10 per cent. of pure narcotine.

An analysis of the crude opium, according to the method of Fordos, gave as the mean of two operations—morphine, 8.40 per cent., narcotine, 3.60 per cent.; that is to say, a smaller proportion of morphine than that indicated in the Codex as the yield of Smyrna opium.

The facility with which this opium dissolves in water, its deliquescence in the air, etc., led M. Charles to suspect its adulteration with honey or glucose. This was rather difficult to decide, as Magnes-Lahens has stated that such a body is present in normal opium, or at least in that from Smyrna. Experiment showed that both varieties evidently reduced the cupric solution, but it was a question whether this reduction was due exclusively to glucose. Fermentation alone would appear to the author capable of accounting for it, considering the multiplicity of products that are contained in opium, a certain number of which belong to the glucose family, and reduce the blue liquor. Parallel experiments were made with the cupric solution and with fermentation. Smyrna opium gave off few bubbles of carbonic acid, and the so-called Persian several cubic centimetres; but there was no concordance between these results and those furnished by the Fehling test, which tends to corroborate the author's suspicion. In any case, M. Charles considers this variety of opium to differ notably from that which was described by Guibourt under the name of Persian opium.

A CAUTION IN REGARD TO THE UNGUENTUM ZINCI OXIDI OF THE NEW U. S. PHARMACOPŒIA.

Formerly the unguentum benzoini which forms the base of this ointment was prepared by boiling benzoin in lard. A small quantity only of the benzoin was thus dissolved, sufficient, however, to obviate the rancidity of the lard. In consequence of the objections made to the mode of preparing it, that the resulting ointment was of a dirty-white color, and deposited a portion of the benzoin when heated, it is directed in the new Pharmacopœia that the ointment shall be made by melting the lard with the tincture of benzoin. By this process a larger portion of the benzoin is incorporated with the lard and hence the zinc ointment made with it becomes irritating. In a case in which we had occasion to prescribe anew some benzoated zinc ointment, we were surprised to find that it proved highly irritating instead of soothing, as formerly: we were hence led to examine the ointment, and its appearance was so different from that previously used that we inferred the apothecary had made some mistake in its preparation, but we were informed by him that it had been prepared according to the new formula of the U. S. Phar.—*Medical News and Library.*

ETHERIAL TINCTURE OF IODOFORM.

MM. Odin and Leymaire (*The Doctor*, Sept. 1) have, at the request of Dr. Gubler, who uses an etherial solution of iodoform as a topical application, sought to ascertain the most favorable conditions for its preparation, and to determine the relative proportions in which the iodoform is soluble.

1. A solution prepared in a flask of white glass after a little time became discolored; the canary yellow passed to an amber, and then to a brown color. This change was the result of a liberation of a portion of the iodine, which colored starch-paper blue.

2. When iodoform, previously pulverized, was used, the solution, exposed to diffused light, altered much more quickly than the first.

3. When two etherial solutions were made simultaneously, the one with crystallized iodoform, the other with powdered iodoform, and using red glass bottles, the first preserved its yellow tint, the second assumed a brown color after a few days.

Solubility.—Experiments made with pure ether of 69° Baumé (s. g. 724), and also with ether of 62° and 56°, the temperature being 13° C., eight grammes of tincture obtained with these ethers contained iodoform in solution respectively to the following extent:—

Ether of 65° Baumé.....1.61 grammes.
" 62° " .....1.26 "
" 56° " .....1.13 "

The iodine being equal in the first case to 25.195 per cent. of the ether; in the second to 18.694 per cent., and in the third to 16.044 per cent.: or in round numbers at 65° B., one-fourth; at 62° B., one-fifth; and at 56° B., one-sixth.

The conclusions drawn are:—

1. To employ iodoform in a crystallized state.
2. To make the solution in a *red* glass flask by simple agitation.
3. To use the following proportions:—
   Crystallized iodoform.....1 gramme.
   Ether (65° Baumé).....4 grammes.

USE OF NUT-OIL IN CITRINE OINTMENT AND OTHER PHARMACEUTICAL PREPARATIONS.

In a paper recently published (*Bull. des Trav. Soc. Pharm. de Bordeaux*, xiii. 165) M. Falières states that, during a comparative investigation of pure olive oil and nut-oil (*Arachis hypogœa*), he observed that the nut-oil possessed a peculiar aptitude for solidification under the action of nitric acid; and he conceived the idea of substituting it for the mixture of olive oil and lard at present used in the preparation of nitrate of mercury ointment. He reports that he has obtained satisfactory results by using 5 parts of mercury, 10 parts of nitric acid (specific gravity 1 42), and 100 parts of nut-oil. The mercury, dissolved in the acid without heat, is poured into the oil, and agitated occasionally with a glass or earthenware spatula. After two or three hours, according to the quantity operated upon, and at a temperature of 68° Fahr., it takes a milky consistence, and after about another hour thickens to that of soft butter, when it may be poured into paper moulds in uniform layers without any separation of the mercury and oil taking place. The maximum of firmness appears to be acquired in from two to three days; specimens kept for two or three months have not shown any appreciable increase in hardness. The author considers that the ointment made with nut-oil has greater cohesion, is less friable, and is better adapted for friction than the Codex preparation.

M. Falières refers to the considerable extent to which arachis oil is used by perfumers in the manufacture of pomades, cold cream, etc., and points out that it is now produced as a white, bland, tasteless oil.

which, he considers, might be used with advantage in many pharmaceutical preparations. It is a type of a non-drying oil, absorbs relatively small quantities of perfume, requires comparatively little wax, spermaceti, or stearine for its solidification, and may be kept almost indefinitely without turning rancid. [In the Codex, where equal parts of olive oil and lard are ordered as the fat excipient in citrine ointment, the relative proportions of nitric acid are the same as above; in the British Pharmacopœia, where the proportion of olive oil to lard is larger, the proportion of nitric acid is 12 parts to 4 of mercury. —*Rep.*]

ON THE AMOUNT OF ALKALOIDS CONTAINED IN SOME COMMERCIAL ELIXIRS.

At the meeting of the American Pharmaceutical Association of 1872, Mr. Ottmar Eberbach, of Ann Arbor, made a Report in answer to a *query* assigned to him in relation to the above subject. We make the following interesting extracts:—

"The unceasing accumulation of literature agitating the elixir question, instead of leading to a systematic uniformity, is steadily increasing the complexity, with the mass of supposed information; and the style of these medicines is so attractive that nearly the whole Materia Medica is drawn into the current of the elixir swindle.

The intended object of elixirs is to make certain medicines agreeable to the taste and acceptable to the stomach. The substances constituting these preparations are invariable: alcohol, sugar, aromatics, and the active principles.

As we find the elixirs in market, the proportion of alcohol is comparatively large, and the dose of active ingredients necessarily small, instead of being so adjusted that the former would be but a minimum in comparison with the dose of active ingredients administered. This circumstance makes these elixirs appear as serving more the purpose of an intoxicating stimulant than that of a medicine.

The most popular of these elixirs are those of calisaya, cinchona, with iron; cinchona with iron and strychnia; ferrated elixir of gentian, and elixir of valerianate of ammonia."

In order to satisfactorily answer the query as to the quantity of alkaloids contained in the elixirs of the drug market, samples were obtained from various sources, and submitted to careful examination. The result in case of the *Ferrated elixir of cinchona* (one of the most popular of the number) is here given,—being the mean of not less than three analyses.

Names of Manufacturers.	Amount of Bark claimed in 1 pint.	Amount of Alkaloid claimed in 1 pint.	Amount of Alkaloid calculated in 1 pint.	Amount of Alkaloid found in 1 pint.	Amount of Alkaloid falling short of claim.	Amount of Alkaloid exceeding claim.
	Grains.	Grains.	Grains.	Grains.	Grains.	Grains.
John Wyeth & Brother, Ferrated Elixir of Cinchona	640	.....	12.8	12.8	.....	.....
John Wyeth & Brother, Elixir Calisaya Bark, Iron, and Strychnine	640	2.56	1.53	1.4	1.36	.....
Caswell, Hazard & Co , Ferrophosphorated Elixir of Calisaya Bark	480	.....	9.6	3.	6.6	.....
Caswell, Hazard & Co., Ferrophosphorated Elixir of Calisaya Bark, with Strychnine.	480	1.	10.6	4.8	5.8	.....
Tilden & Co., Elixir Calisaya Bark, Iron, and Strychnia	640	1.28	14.08	9.2	4.88	.....
Tilden & Co., Elixir Calisaya Bark and Pyrophosphate of Iron	480	.....	9.6	6.9	2.7	.....
Tilden & Co., Elixir of Quinine, Iron, and Strychnia	.....	17.28	.....	14.4	2.88	.....
J. R. Nichols & Co., Elixir of Cinchona, Iron, and Strychnia	.....	.....	.....	7.6	.....	.....
Park, Davis & Co., Elixir Calisaya, Iron, and Strychnia	960	1.28	20.48	25.2	.....	4.74
Park, Davis & Co., Elixir Iron, Quinine, and Strychnia	.....	32.5	.....	19.6	12.9	.....

Another new ether is that just discovered by Mr. George Archbold. Of the two thousand and odd ethers it is the lightest known. Its specific gravity is .680—little more than half that of water—and its boiling-point is 73° F. *Par excellence*, the "light ether," as it is called, consists of four atoms of carbon, ten of hydrogen, and one of oxygen. As compared with hydrogen its vapor density is 36. From its highly light, volatile, and inflammable nature, caution is required in its manufacture. The temperature of the human body suffices to make it boil violently, as may easily be tested by putting a small quantity of it on the head. It has been tried in several surgical cases, and with the most gratifying results.—*The Lancet.*

Alcohol from Lichens.—The production of alcohol from lichens assumes gradually the character of a regular industrial pursuit in northern Finland and Russia. The quality of the spirit gives eminent satisfaction.

Adulteration of Absolute Alcohol with Ether.—It would not at first appear that this adulteration could be carried on profitably, but a case recently came under the observation of the writer, in which the specific gravity of a large quantity of alcohol, procured from Germany by a firm dealing in photographic chemicals, was

lowered by this means. The odor of ether was not so apparent as to be noticed by those who used the alcohol, but in the manipulation of collodion, the want of tenacity, or *rottenness*, of the film gave evidence of the presence of water, and led to an examination of the materials, when the adulteration alluded to was detected. The quantity of ether was not determined.

This adulteration may be readily detected by pouring upon a plate, or saucer, a small quantity of the suspected alcohol, and applying a light. Alcohol burns with a blue flame, almost destitute of luminosity, but if ether is present the flame becomes more or less white, or luminous, according to the proportion of ether present. A very slight trace may thus be detected.

Fluid Extract of Valerian containing Glycerine.—A correspondent of the *American Journal of Pharmacy* recommends the use of glycerine in preparing this fluid extract. The advantages claimed for the preparation are: its cheapness, when compared with the alcoholic product; the amount of time occupied in evaporation is less, as the material is exhausted by a smaller quantity of menstruum; lastly, that the preparation is superior to the officinal preparation. The pharmacopœial directions for preparing that class of extracts containing, when finished, four fluid ounces of glycerine, were followed, and the root was reduced to a "moderately fine powder."

Substitutes for Tea.—The Agricultural Bureau brings matè under attention, and by comparative analysis proves that yupon, matè, and tea and coffee all contain the same active principle—theine. Matè, says the *Philadelphia Medical Reporter*, is a Peruvian weed, largely indulged in by Indians and half-breeds. It is concocted in a small silver porringer, with a tight lid and a small spout, which spout goes the round of the blackened mouths of the matè-sucking circle. It is a great breach of etiquette in Peru to refuse to take matè on such conditions. The last proposition is to supplant tea and coffee by "yupon," and the proposition also comes from the National Department of Agriculture. "Yupon" is an Indian word, and the plant itself is the cassine yupon, the *Ilex cassina*, a diuretic, and in large quantities emetic. It was used by the aborigines, and also by the "poor white folks" in former days.

Cod-Liver Oil Bread.—The repugnance of childhood and even adult life to cod-liver oil is well known. Numerous attempts have been made to mask its taste by gelatinization, capsules, etc., but all with only partial success. M. Bouchut has just devised a new process, that, namely, of incorporating the oil with flour, which is then

made into bread. We have tasted this cod-liver oil bread, and found it in no way disagreeable. M. Bouchut assures us that his experience of the past few weeks has been very encouraging. It is made now in quantity on the Rue de Biévre, and the fact of such a successful mask to the oil should be disseminated.—*Mouvement Médicale*, July 12, 1863.

Diabetic Bread.—In a somewhat recent number of the *Bulletin Général de Thérapeutique*, M. Dannecy proposes the use of bread made from roasted flour, for diabetic patients, instead of gluten biscuit. He asserts that roasted starch cannot be converted into glucose, and that bread made out of the various farinas so torrified is greedily eaten by patients who have been restricted to the ordinary preparation of gluten until they have become thoroughly disgusted. Moreover under its use the thirst lessens, and the digestive derangements are markedly ameliorated. The good effect upon the elimination of sugar by the kidneys is at least equal to that obtained by the exclusive use of the classical diabetic diet.—*Medical Times.*

Amykosaseptin, or amycetoseptin, is an antiseptic consisting in a solution of borax combined with decoction of cloves. The author of a paper in *Allg. Med. Cent. Zeit.*, No. 46, 1873, thus describes its action:—1. Boric acid prevents bacteria from penetrating into the tissues, and thus prevents rot. 2. It destroys bacteria which may already exist in the tissues, and thus arrests rot. 3. It speedily kills true infusoria. 4. It is often a deadly poison for articulated animals and their larvæ. 5. It does not prevent the development of mildew. 6. The decoction of cloves only possesses, in a limited degree, the property of preventing the development of mildew, but it certainly delays the process, and renders it difficult.

Oxymaleic Acid.—M. Bourgoin gives the above name to a new organic acid, which he states differs from maleic acid by two equivalents of oxygen, and from maleic acid by two equivalents of hydrogen. Thus: Maleic acid=$C^8H^4O^8$, oxymaleic acid=$C^8H^4O^{10}$, maleic acid=$C^8H^6O^{10}$. The new substance is solid, white, and of an odor similar to that of maleic acid. It is very soluble in water, which it abandons on evaporation, under the form of very delicate, long, penniform crystals. It is equally soluble in alcohol and in ether, separating itself from the latter vehicle in the shape of elongated crystals grouped in stars.

Trichloracetic Acid.—This acid, which is one of the best substances known for cauterizing warts, corns, etc., may be conveniently prepared by mixing chloral hydrate with its own weight of strong nitric acid, and exposing to sunlight for three or four days. The pro-

duct is distilled, and the portion coming over at about 195° C. is collected apart.

New Compounds.—At a recent meeting of the American Academy, Dr. W. Gibbs stated that he had succeeded in forming compounds of phosphoric acid and magnesia with the vegetable alkaloids strychnine and brucine. These compounds are formed on the same type as ammonio-magnesic phosphate, and have the general formula

$$RM_gPO_4+Aq,$$

R representing any alkaloid. The compounds of brucine and strychnine are very insoluble and beautifully crystalline. He thinks that they may be utilized for the quantitative estimation of these bodies, as they are totally insoluble in dilute alcohol. Similar compounds are also formed with arsenic acid.

New Solvent for Iodine.—Glacial acetic acid is said to be not inferior to alcohol as a solvent of iodine.

A Third Alkaloid in Hydrastis Canadensis.—From experiments made by A. K. Hall (*Am. Jour. Phar.*) it appears probable that there exists in hydrastis another alkaloid besides berberina and hydrastia. After the berberina was removed from a watery percolate as a hydrochlorate, and also hydrastia by careful neutralization with ammonia, it was found that excess of ammonia produced another precipitate, more resembling berberina than hydrastia, but decidedly different from the former. The author does not determine the composition of this new substance, or even assert its existence as a third alkaloid, but obtained some reactions distinguishing it from the other alkaloids, which led him to make a note of the matter, and await further developments.

Cod-Liver Oil and Lacto-Phosphate of Lime.—Edward Childs, writing in the *Am. Jour. of Pharmacy*, says the following formula for this mixture gives invariable satisfaction and produces an article which does not separate or become rancid. He thinks, however, that it should be prepared extemporaneously to insure its being perfectly sweet:—

Take of gum arabic, oz. ij., dr. ij.; water, fl. oz. ij.; syrup lacto-phosphate of lime, fl. oz. vi.; cod-liver oil, fl. oz. viij.; essential oil bitter almonds, six drops; rub the gum, water, and syrup together, until a smooth mucilage is made, then add the oil gradually with constant stirring, and, lastly, the oil of bitter almonds.

Thus made, each tablespoonful of cod-liver oil and lacto-phosphate of lime contains four grains lacto-phosphate of lime and fifty per cent.

of cod-liver oil. The gum in the above should be selected, ground, and passed through a sieve of sixty meshes to the inch. Cod-liver oil and lacto-phosphate of lime, prepared in this manner, forms a preparation free from unpleasant taste and odor, and enables the practitioner to administer these valuable remedies without repugnance on the part of the patient.

Syrup Lacto-Phosphate of Lime.—Take of chloride of calcium, oz. i.; phosphate of soda, oz. iv.; concentrated lactic acid, oz. i.; dissolve the chloride of calcium and phosphate of soda separately, and mix the solutions; wash the precipitate and dissolve in the acid. Filter and mix with sufficient syrup to make two and one-half pints.

At a pharmaceutical meeting at Philadelphia, Mr. Brown stated that he had experimented in making syrup of lacto-phosphate of lime with the substitution of glucose for sugar; in his experience this obviated the precipitation frequently met with. The dilute lactic acid of our commerce was described as being the concentrated or the officinal acid reduced to 4° Baumé, by the addition of distilled water.

Syrupus Ferri et Quiniæ Iodidi.—The following two formulæ for this syrup are given in the *Pharmaceutical Journal* (vol. iii. p. 878), the latter being taken from Dorvault's *L'Officine*, i.:—

1. Quiniæ iodidi, 1 grain; acid. acet. dil., 3 minims; syr. ferri iodidi, 1 drachm. M.

2. Place iodine (5 parts) and iron (2 parts) in water (20 parts). Allow the reaction to go on until the color has disappeared; filter and mix with simple syrup (1.120 part); then add sulphate of quinine (1 part), dissolved in a sufficient quantity of dilute sulphuric acid.

Improvement in the Administration of Perchloride of Iron.—Dr. Herbert L. Snow (*Br. Med. Jour.*, June 28) says that the metallic, astringent taste long remaining in the mouth after the administration of tincture of perchloride of iron may be completely avoided by the addition of a small quantity of glycerine, about half an ounce to an eight-ounce mixture being ordinarily sufficient.

In the same journal of July 5, Dr. Alex. Boggs, of Paris, recommends glycerine not only for this purpose, but also as an addition to remedies which have a tendency to constipate the bowels, its action being mildly aperient, and also on account of its solvent powers, which exceed those of syrups.

Oxalate of Iron.—M. Dalmon has been making some experiments with the various oxalates of iron, and especially with the neutral ferrous oxalate, which has been recently the subject of a communication to the Academy. He is of opinion (*L'Union Pharmaceutique*, xiv. 112), considering the insolubility of this salt, that, when well

washed, it does not produce the laxative effects claimed for it in that memoir, but that the purgative properties attributed have been due to intestinal irritation from the use of an acid salt. He therefore thinks there would be no advantage in introducing so uncertain a remedy, since there are other ferrous organic salts, such as the lactate, which are known to render real service.—*London Med. Record.*

A New Solution of Chloride of Iron.—If the deposit from Liquor ferri alkalini, P. L., 1824, be collected and washed frequently, and added while moist to a weak solution of hydrochloric acid (one fluid drachm acid to fifteen fluid drachms water), the solution, when filtered, presents certain peculiarities. It has a deep garnet color; it has scarcely any taste, either of acid or iron, and is exceedingly astringent. The preparation is said by the author to answer to the Liq. ferri chloroxidi, mentioned by Mr. Squire, in his last edition of the *Companion to the Pharmacopœia.*—Edward Butler, *Pharm. Jour. and Trans.*

Seidlitz Powders.—A curiously interesting investigation in regard to the Seidlitz powders sold in America was made last year by Mr. C. W. Grassly, of Chicago, and reported at the meeting of the American Pharmaceutical Association. It should be mentioned that seidlitz powders are officinal in the United States Pharmacopœia, and that each should contain, in the alkaline mixture, 120 grains of Rochelle salt, with forty grains of bicarbonate of soda, and in the other paper thirty-five grains of tartaric acid. Mr. Grassly collected one hundred and sixty-five samples from various parts of the Union and Canada, and found but two in the whole number which were of correct Pharmacopœia weight. These two were both found in Chicago. The mixture powder varied from eighty-two grains to 250. The acid from nine grains to sixty-three. The habit of measuring the powders was credited with these extraordinary discrepancies, and "this villanous practice," said the reporter, "is almost universal." The amount of pressure exercised in its employment was stated to allow considerable deviations. In discussing the report several prominent members of the association expressed a righteous horror at the custom of measuring Seidlitz powders. Professor Diehl, for example, remarking that "every druggist that is conscientious will weigh his powders."

Action of Nitrous Oxide.—Joylet and Blanche (*Archives de Physiologie*, v., July, 1873, p. 364) have obtained the following results from their experiments on this subject. Chemically pure nitrous oxide will not support the respiration either of animals or plants, as they cannot decompose the gas. When breathed in a pure state by animals,

it causes asphyxia and death, with all the symptoms usually occasioned either by strangulation or by the respiration of an inert gas, such as nitrogen or hydrogen. Nitrous oxide causes death in nearly the same time as these other asphyxiating agents. Nitrous oxide has no special anæsthetic action. The anæsthesia which it may produce when inhaled in a pure condition is only due to want of oxygen in the blood. Insensibility appears when the oxygen in arterial blood is reduced to less than 2 or 3 per cent. Arterial blood is then very dark, and contains 30 to 40 per cent. of nitrous oxide. Animals can live and show no alterations of sensibility while breathing mixtures of nitrous oxide and oxygen, in the same proportion as nitrogen and oxygen in air. The arterial blood then contains about 30 to 35 per cent. of nitrous oxide. Birds placed under a bell-jar filled with this mixture behave exactly like those placed in a jar of the same size filled with air, and die after having exhausted the oxygen to a similar extent and formed a similar amount of carbonic acid. As nitrous oxide is an irrespirable gas and does not possess the anæsthetic properties which have been attributed to it, the authors conclude that its employment cannot but be dangerous, and ought, on this account, to be excluded from medical practice.

Balsam of Peru.—Hager states (*Chemisches Centralblatt*, vol. iii. p. 742) that if balsam of Peru be well shaken with two or three times its volume of light petroleum oil and left to settle, the mixture will separate into a brown layer and one that is limpid and colorless, or only slightly yellowish, which is easy to decant. If the balsam be adulterated, the latter layer is colored or turbid and more difficult of decantation, whilst the brown residue is sometimes pulverulent.

ACTÆA RACEMOSA.

BY F. H. BAILEY, M.D.

This is a plant well known in the United States, and variously called Cimicifuga Racemosa, Cohosh, and Black Snakeroot. Its use as a medicine appears to be principally confined to the United States and the Canadas. I have been familiar with it from my first commencement of study. Dr. Horace Green used it freely in his early practice, and in his "Selections of Prescriptions" it is mentioned in several formulæ. It does not appear to have been known to English writers except from American sources of information. Pereira mentions it in the American edition of his Materia Medica (1846). Neligan, in his edition of 1844, alludes to it merely from American authority. It is in rheumatism that it has been mostly used in this

country, and I have, for that affection, as well as in chronic ailments of the liver, used it with favorable results.

I generally combine it with iodide of potassium, and other agents which may be indicated at the same time. It can be used in acute rheumatism, combined with alkalies, ipecacuanha, and sanguinaria Canadensis. In sub-acute and chronic rheumatism I have made free use of it in connection with tonics and tonic alteratives.

In chronic affections of the liver, where there is a dull, aching pain complained of in the right and upper part of that organ, attended with the usual pain at the top of the shoulder, I have given actæa freely, and am in almost the daily habit of prescribing it in this locality, where such an affection is very common.

Dr. Green alludes to its use in chorea, and it is doubtless in cases where that disease is a concomitant or sequel of rheumatism that it has been successful.

The following is a favorite formula with me in any non-inflammatory condition of the liver:—

℞ Tr. act. racemosæ..... ℥ ij.
Potass. iodide..... ʒ ij.
Syr. ipecac..... ℥ j.
Tr. sang. Canad..... ℥ ss.
M.

Sig. Teaspoonful three times daily.

In acute rheumatism I use a similar mixture, giving less of the actæa and more of the ipecac.

Very often I combine with it the tincture of cinchona, or the sulphate of quinine, according to conditions and indications.

In reviewing the literature upon this medicine, I find that in the December number of the Chicago *Medical Examiner* there is an article of my own, in which the use of actæa was beneficial in a case of rheumatism followed by decided symptoms of chorea.

The patient, a young lady of seventeen, was attacked with rheumatism of the right foot and ankle. By the employment of pulv. Doveri, and spts. nit. dulc., the extremity became better, but chorea soon made its appearance in the same limb. On the second day the muscles of the right side of the face were involved, and it appeared imminent that chorea might become fully developed. I accordingly prescribed as follows:—

Fluid ext. valerian,
Fluid ext. act. racemosæ.....aa ℥ j.
Syr. ferri iod..... ℥ ss.
Sulph. quiniæ..... ℈ j.

To be taken in doses of a teaspoonful three times daily.

The convulsive movements soon began to disappear, but continued to be apparent after she was able to walk about.

After about two months, during which time she continued to take the mixture, all traces of the affection disappeared. If I recollect rightly, however, the young lady became affected with cardiac symptoms, suffering from palpitation and becoming pale and anæmic in appearance.

In the Chicago *Medical Examiner* for July, 1861, in an article upon this subject, Dr. Davis gives a description of the plant, and mentions the views taken by different writers in regard to its real properties. Allusion is made to the remarks in the U. S. Dispensatory, where it is stated "to be a tonic, with the property of stimulating the secretions of the skin, kidneys, and pulmonary mucous membrane."

Dr. D. thinks the primary action to be sedative, lessening the frequency and force of the pulse, soothing pain, and allaying irritability.

Dr. Young, in the *American Journal of Medical Sciences* for February, 1832, details cases in which chorea was successfully treated by means of this medicine.

Dr. J. S. Garden, of Charlotte, Va., as early as 1823, published a paper in the *Medical Recorder*, in which its influence in pulmonary affections is brought to notice.

In 1843, twenty years afterwards, the same writer again recurs to the use of this remedy, where its utility is confirmed after so many years' experience.

But I have already devoted more space to the consideration of actæa than at first contemplated. I will refer, in closing, to an article in Part xliv., page 25, Braithwaite, by Dr. F. R. McDonald.

He states that his attention was called to the medicine by Dr. Voris, who lived near New York. He says he has employed it in all the acute forms of rheumatism and not only in cases where there are slight rheumatic pains, but that in the severest forms its beneficial effects have been shown.

In a case of acute rheumatism of the right knee, which I have lately treated, I gave actæa in connection with iod. potassii, with very good results.

From what has been observed by others, as well as from my own personal experience, this agent appears to have something of a neurotic effect, acting upon the nervous centres. Whatever may be its modus operandi, there is no question as to its value in therapeutics. —*The Medical and Surgical Reporter.*

THE MANIOC, OR TAPIOCA PLANT.

BY M. PAUL SAGOT.

Tapioca is obtained from the Manioc, or Cassava, a suffrutescent plant belonging to the order Euphorbiaceæ, which has long been cultivated by the indigenous Indians of Guiana and intertropical America. It is the *Jatropha Manihot* of Linnæus, and the *Manihot utilissima* and *Manihot Aipi* of Pohl. By the Indians it is known under various names; the Caribs call it *Kière* and *canhim;* the Galibi, *Kie ray;* the Arrouagoue, *calôli.* In the Antilles, the Spanish colonies, New Granada, Peru, and Para, it is called *yuca;* in Brazil, *mandiocca* and *maniba* and *aïpi* (sweet manioco); in Mexico it is called *tziim.* A great number of varieties have been observed under cultivation, each of them permanent, although sometimes closely resembling another variety, and each distinguished by some particular quality. Botanists have not yet met with any form of the cultivated manioc in a wild state; but in Brazil, Guiana, and Venezuela many undoubtedly spontaneous species of the genus *Manihot* exist, and some of them resemble the cultivated varieties very closely. The province of Goyaz in Brazil produces the largest number of species, and amongst those offering the closest points of resemblance are *M. pusilla*, *M. flabelliofolia*, *M. digitiformis* and *M. triphylla.* Pohl describes the sweet (non-poisonous) manihot (called *Aïpi* in Brazil, *M. Aïpi*, Pohl) as a distinct species from the poisonous manihot (*Yuca brava* or *Mandioca brava* of the Spanish and Portuguese colonies); but the author agrees with Goudot in thinking that they are only varieties of the same species.

The manioc or cassava plant is propagated by cuttings which grow with extreme facility. The plant appears at first as a straight stem, furnished with large digitate leaves, with about seven lobes. At the age of from six to ten months, and when from one to two metres high, it throws off from its summit lateral branches, with smaller leaves, and shortly afterwards bears flowers. The root then commences to develop several elongated amylaceous tubers, which continue to grow underground as long as the branches yield leaves and flowers. At the end of a year and a half or two years the roots are ready for collection; but if not wanted may be left in the ground for some time, provided they be watched that they do not rot. On the other hand they may, if required, be gathered earlier, but the yield is not so good. The stalks, which are planted about a metre apart, usually produce two or three tubers, varying in size and weighing together from one to three kilogrammes. The plant is not very choice as to soil, but flourishes most in freshly cleared ground, and prefers well-drained spots, an excess of

moisture causing it to rot. Although living for two or three years, the plant is not strictly a perennial, since it becomes gradually exhausted as the tubers attain their full size. The sweet manihot is usually gathered earlier, since the root becomes hard and bad if left to develop too much.

The yield of the manioc root, considering the time it occupies the ground, when compared with other farinaceous roots, is not great; but, on the other hand, it contains less water than any other starchy root; when mature, less than sixty per cent. Its texture is very dense and compact. It contains much starch, and its richness in albumen and other nitrogenized matters is estimated at two per cent. In converting the roots into an edible flour, they are scraped, peeled, and then washed; next they are rasped upon a wooden plank armed with small iron teeth, and the pulp is left twenty-four hours, by which time a slight fermentation is set up. It is then placed in a long, flexible basket, called a *couleuvre*, usually made of plaited rushes. The *couleuvre* is suspended by a handle at its open end, and a heavy weight is attached to the other end, by which means the sides are compressed together, and a slightly opaline aqueous juice, which is highly poisonous, is caused to ooze through the plaits. The pressed meal is then taken out and exposed for some time over a fire; afterwards pounded, coarsely sifted and roasted on a brass plate over a fire to upwards of 100° C., care being taken by constant renewals to prevent scorching. Sometimes during the roasting it is stirred to and fro with a small rake of wood or metal; it is then formed into small hard grains, having the appearance of semolina, which are called *couac*. When *cassava* is to be prepared, the meal is more carefully pounded and better sifted. It is then spread circularly upon the plate, pressed slightly with a pallet-knife to cause it to aggregate, and turned two or three times during the roasting. In both operations there is complete cooking and desiccation effected, which enables it to be kept an almost indefinite time. The aggregation of the meal is caused, not by the addition of water, but by the action of heat, softening and agglutinating some of the particles of starch.

M. Sagot considers the manioc to be healthy food, although of small nutritive value. Dr. Schier estimates it to contain 0.18 per cent. of nitrogen, but little phosphorus, and a very small quantity of fatty matter. The indigenous tribes, who make it the basis of their food, supplement it with a good quantity of fish and meat.

In the preparation of tapioca, the root is rasped and diluted with water, in which it is well worked up; the grosser parts are removed and the finer allowed to be deposited by subsidence in the water. In this form it is imported into this country in considerable quantities as

Brazilian arrow-root. The tapioca is produced by roasting this starch on metal plates, stirring it the while with an iron rod; the starch grains burst, some of the starch is converted into dextrin, and the whole agglomerates into small irregular masses.

In Demerara, the manioc juice, deprived by boiling of its injurious properties, is used under the name of *cassareep*, as a sauce for the table. Besides this, the Indians use the root of the manioc to prepare fermented drinks, which, however, would hardly suit European tastes. It is probable M. Sagot thinks that the poison present in the manioc is an instable organic compound, hurtful in itself, but especially dangerous from the fact that, under certain conditions, it will engender hydrocyanic acid. The leaves when bruised exhale a smell of bitter almonds, and the presence of prussic acid in the roots has been established. This he considers to explain the fact that while the manioc water, especially when distilled, is very poisonous, in Guiana and Brazil the Indians, after boiling it and removing the scum, use it as a beverage. Although wild animals, too, are sometimes poisoned through eating the leaves, sometimes they are not; this, he thinks, occurs when a small quantity being eaten, the gastric juice exercises an energetic action before hydrocyanic acid can be developed.

The sweet cassava, or camanioc, contains so small a quantity of acrid principles that the roots are cooked at a fire and eaten like potatoes. It is a rapid growing variety, becoming ripe in five or six months, and in two or three months more the roots become hard and unfit to eat. The bark of the stalk is white, the petioles of the leaves are of a fine purple-red color, and the luxuriant leaves at the foot of stalk are 7-partite. The tubercles are long and of small diameter; when cooked in the ashes of a fire they are agreeable to the taste, sweet and of a fine consistence.—*Pharm. Journ.—Druggists' Circular.*

SYRUP OF THE PHOSPHATES OF IRON, AMMONIA, QUINIA, AND STRYCHNIA.

BY CHARLES G. POLK, M.D.

℞	Ferri sulph. (Gran)	℥ vi.
	Sodii phosph	℥ x.
	Acidi phosphorici glacial	℥ ix+ ʒ iii.
	Aquæ ammonii concent	q. s.
	Quiniæ (alkaloid)	grs. 384
	Strychniæ	grs. xii.
	Sacchar. alb	℥ xxxvi.
	Aquæ destil	q. s. ad ℥ xlviii.
	Acidi nitrici, C. P	ʒ vi.

Dissolve the iron in ℥ x. and the sodium in ℥ xx. of boiling water, and wash the magma with sweetened water to prevent further oxidation. By careful washing, the bluish shade it is so prone to assume may be prevented. Dissolve the glacial phosphoric acid in twenty ounces of distilled water, add the nitric acid, and apply heat until the fumes of nitric acid cease to be evolved, or until the solution is evaporated to a syrupy consistence measuring sixteen fluid ounces. In six ounces of the syrupy phosphoric acid thus formed place the phosphate of iron at once, and continue the application of heat until a perfect solution is formed. Saturate six ounces of the syrupy phosphoric acid very nearly with concentrated, ammonium water, leaving a very slight acid excess.

Mix the solutions of iron and ammonium together in a porcelain evaporating dish, add ℥ xxii. of the sugar, dissolve and evaporate to forty ounces. Dissolve the quinia, strychnia, and the remainder of the sugar in the two ounces of the acid with sufficient distilled water to make eight ounces; thoroughly mix all together and bottle with an accurately fitting stopper.

Each drachm contains five grains of the phosphate of iron, five grains of the phosphate of ammonium, one grain of the phosphate of quinia, and one-thirty-second of a grain of the phosphate of strychnia.

This preparation seems especially adapted to neuralgia, chronic engorgement of the uterus, and diseases of a nervous character. In such cases the large amount of iron in combination with ammonium, quinia, and strychnia proves very efficacious and exceeds in value all else. As a tonic it is no favorite of mine. Drachm doses often cause considerable headache and derangements of the digestive organs when continued for several days. In cases of anæmia, chlorosis, and malarial toxæmia, I prefer my formula published in the December number, 1872, of the *Druggists' Circular*, when the stomach will tolerate it, or the following formula in cases where that preparation cannot be taken:

℞	Ferri phosph. ammonio-citratis....	grs. 128
	Quiniæ.....	grs. 64
	Strychniæ	grs. ij.
	Liq. potassii citratis.....	q. s.
	Curaçoa cordial.....	℥ xij.
	Syr. aurant. flor.....	q. s. ad ℥ xvi.

Dissolve the iron, quinia, and strychnia in the Curaçoa cordial by the aid of gentle heat, adding sufficient of the solution citrate of potassium to form a clear solution, and then complete the measure of sixteen ounces with syrup of orange-flowers. Dessert-spoonful thrice a day forms a very efficient and agreeable dose.

The phosphate of the ammonio-citrate of iron can be procured of J. L. Creuse, New York. I regard this preparation as superior to the pyrophosphate in every particular.

OLEIC ACID AND OLEATE OF MERCURY.

BY H. MACLAGAN.

Having been called upon a short time since to prepare some oleate of mercury, and thinking it likely to become a popular preparation, I have transcribed my experience, hoping it may prove of service to those who may have to perform a similar operation.

The first step in the process was to obtain olin, and the expressed oil of almonds, which consists almost entirely of that substance, was chosen, as being sufficiently pure for the object in view, without further preparation; the object being to obtain a definite chemical compound of mercury and an oleaginous body, and not a mere mechanical mixture. The oil was saponified with potash, and to the resulting soap hydrochloric acid was added, with constant stirring, until the mixture had acquired a decidedly acid reaction. It was then poured into a glass funnel, stopped at the bottom with the finger, and allowed to rest until the oily portion of the liquid (oleic acid) had risen to the surface; the finger was then partially removed and the watery portion permitted to run slowly off, the funnel being again closed. When this was nearly completed, more water was added, the mixture agitated, allowed to rest, and the water run off as before. This operation was repeated several times until the acid was thoroughly washed. It was then transferred to an evaporating dish and gently heated to separate perfectly the remaining water, and, after resting a short time, the supernatant oily liquid was carefully poured off. About three ounces of acid were obtained from four of the oil.

The oleic acid being prepared, the rest of the process was simple. It consisted in merely dissolving in it peroxide of mercury, which is easily accomplished by the aid of a *gentle* heat. A high temperature must be avoided, or the peroxide will be reduced and become insoluble. The peroxide used was prepared by decomposing a solution of pernitrate with potash; the commercial article being said to be difficult to dissolve. Three solutions have been spoken of, containing severally five, ten, and twenty per cent. of peroxide, but I think it would be better, as well as more economical, to make as strong a solution as possible, and dilute to the necessary strength with olive or other oil. A preparation thus made would fully answer the required purpose, as

there is no particular virtue in the excess of oleic acid, and I think it would be more stable, and also less liable to cause irritation.

It seems to me that this would be an excellent substitute for that very unsatisfactory preparation, Red Precipitate Ointment.—*Can. Pharm. Journal.*

Guarana.—The following facts in regard to this new remedial agent are taken from an interesting paper read before the Liverpool Chemists' Association by Mr. Joseph Hallawell (*Chemist and Druggist*, March, 1873). Guarana sorbilis, the plant from the seeds of which guarana is prepared, grows in the wild state to a height of 30 or 40 feet, but the cultivated plant is trailed as near as possible to the ground. It produces fruit in three years after planting, and the plant will live forty years, under careful cultivation; each stem will yield eight to ten pounds of seed annually.

The Indians remove the ripe seeds from the capsules, and dry them in the sun. After a slight roasting the seeds are reduced to a fine powder, which is slightly moistened and exposed to night dew. In this way a paste is formed, which is hardened by introducing fragments of the seeds. This paste is rolled into cylinders and dried, forming the commercial guarana. These cylinders become so hard that they require to be broken with an axe. Much of the guarana imported is of inferior quality, having no medicinal value whatever. The powder, when pure, should be of a bright brown or cinnamon color, that of the sophisticated article being of a whitish gray. Heated slightly in the open air, it has the smell and taste of roasted coffee; it has the bitter, styptic taste of the cocoa berry, and is softened and partially dissolved by water.

Its principal value, as a therapeutic agent, has been found in its relieving nervous sick-headaches, but in Brazil it is used as a remedy for the diarrhœa and dysentery, so prevalent there, and it is also used by the natives as a tonic and stomachic. The dose of the powder is from 30 to 40 grains, repeated every two hours if required. An alcoholic extract has been prepared, which contains the caffeine, and possesses the therapeutic properties of the crude drug.

ON THE PREPARATION OF SPIRITUS SAPONIS, LIQUID OPODELDOC, AND MEDICINAL SOAP.

G. H. BARKHAUSEN.

In the number for October, 1872, of this journal, I spoke about the practical advantage of using potassa-soap in the preparation of the above articles.

As for the process involved in the preparation of soap with alcohol, I ventured suppositions at that time which are not sustainable. Bouis teaches us, in his valuable work on the Theory of Saponification, vol. 94, p. 330 of this journal, that, in the treatment of stearine with 2 eq. KO dissolved in alcohol, 2 eq. stearate of potassa, and 1 eq. of stearate of the oxide of ethyl are formed, accompanied by separation of glycerine. Since all natural fats are considered as triglycelides—*i.e.*, as consisting of 3 eq. of acid to 1 eq. of oxide of glyceryl—therefore the same process will take place when any triglyceride is treated with an alcoholic solution of potassa. What I looked upon as a decomposition of common soaps by alcohol into free alkali and acid stearate of potassa, is proved to be, according to the above theory, a separation of alkali caused by the simultaneous formation of stearate of the oxide of ethyl.

If instead of boiling stearine with 2 eq. KO in alcoholic solution, it is boiled with 3 eq. KO in aqueous solution, a neutral soap will also be obtained. In this case one-half more of KO is needed. Accordingly, one-half more of alkali in aqueous solution is requisite for the saponification of any fat, than when the alkali is dissolved in alcohol. This supposition was proved correct, as far as we may judge from a superficial experiment. Olive oil was saponified with 10.38 per cent. NaO dissolved in absolute alcohol, this being the maximum with which the oil combines, forming a neutral soap. On the other hand, olive oil was treated with 24 per cent. NaO, dissolved in water, the lye separated from the soap by NaCl was found to contain 8.75 per cent. NaO, the saponification of the oil having consumed 15.25 per cent. NaO. By continuing the operation of boiling longer, as is necessary in the preparation of soaps with aqueous lye, the presupposed quantity NaO of $10.38+5.19=15.57$ per cent., would probably have been approached more closely. The combination prepared with 10.38 per cent. NaO (dissolved in absolute alcohol), since it contains $\frac{1}{3}$ less alkali than the soap prepared with water, must be looked upon as consisting of 2 eq. stearate of soda and 1 eq. stearate of the oxide of ethyl.

This combination of 10.38 per cent. NaO, or 15.75 per cent. KO respectively, is easily decomposed by heating with water and a surplus of alkali, the alkali substituting oxide of ethyl. Such a decomposition takes place readily with the small quantity of water contained in an alcohol of 86 per cent., but when heat is applied with a larger quantity of water, this decomposition takes place much more rapidly, the soap consuming in its formation 11.68 per cent. NaO, or 17.7 per cent. KO respectively. This combination, since it contains $\frac{1}{4}$ less alkali, would have to be considered according to the above explanation as a soap prepared with aqueous lye, consisting of 3 eq. stearate

of soda or potassa and 1 eq. stearate of oxide of ethyl. The same is more permanent than that with 2 eq. of stearate of soda: only after heating for some time with water and a surplus of alkali it will absorb 12 per cent. NaO or 18.5 per cent. KO: decomposition does not seem to proceed further, even by continuing the heat.

These are my views at present on the theory of treating soaps with alcohol, based upon the investigations of Bouis.

To sum up: olive oil saponifies with 16.5 per cent. KO, or 11 per cent. NaO, in alcoholic solution at 100° Celsius: it saponifies with 18.5 per cent. KO, or 12 per cent. NaO, in alcoholic solution at 110° C., by the subsequent addition of water and application of heat; but it cannot be saponified with less than 25 per cent. KO, or 16 per cent. NaO, when they are dissolved in water.

The method of preparing spiritus saponatus, liquid opodeldoc and medicinal soaps, in order to conform as much as possible to the existing formula of the pharmacopœia, would be as follows: —

1. SPIRITUS SAPONATUS.

Olive oil	100 parts.
Filtered solution of caustic potassa in alcohol, containing 16.5 parts KO	300 "
Alcohol	250 "
Rose water	350 "

Dissolve the oil in the alcoholic potassa solution at 100° C., digest for about one hour, then add the other ingredients.

2. LIQUID OPODELDOC.

Olive oil	100 parts.
Filtered solution of caustic potassa in alcohol, containing 16.5 parts KO	300 "
Alcohol	600 "
Water	400 "
Camphor	25 "
Oil of thyme	5 "
Oil of rosemary	10 "
Ammonia	40 "

Proceed as in the previous.

3. MEDICINAL SOAP.

Olive oil	100 parts.
Filtered solution of caustic soda in alcohol, containing 12 per cent. NaO	150 "

After solution at 100° C., evaporate with the addition of two or three hundred parts of water in a steam bath to dryness.

All three preparations contain glycerine, which does not impair the first, and may be of use in the soap, as it probably prevents it from becoming rancid. Common soaps, on becoming very dry, soon assume a rancid odor, caused by decomposition.—*Archiv der Pharmacie*, January, 1873.

SULPHO-MOLYBDATE OF AMMONIA AS A TEST FOR SOME ORGANIC COMPOUNDS.

BY J. H. BUCKINGHAM.

Among the latest tests for the detection of morphia, a solution of sulpho-molybdate of ammonia will be found the most delicate. The beautiful blue color which it gives when dropped upon that alkaloid is indeed a striking reaction. It will give, however, a characteristic color, not only with morphia, but also with many other organic principles.

One of the peculiarities which I noticed, while making my experiments, was that, when allowed to stand for any length of time in contact with the compound, the solution always became blue. This color was light or dark, according to whether or not the solution, when first applied, gave a characteristic color. This change is due to the oxidation of the solution, as all salts of molybdic acid or its compounds, when heated in contact with air, will finally turn blue. This, however, is hastened by the contact of some organic matter or any deoxidizing agent.

This test may be prepared by mixing eight grains of molybdate of ammonia with two drachms of sulphuric acid (chemically pure). The milky solution is then heated until it becomes clear, care being taken not to raise the heat too high, or a change will take place.

This solution should be made fresh every time it is wanted for use. Small quantities should be used, as different results may be obtained by increasing the quantities.

The following are the reactions with some of the most important alkaloids and other principles.

1. Those which, at first, produce no color, but afterwards change to a light blue.

Alkaloids, etc.	First Color.	Second Color.	Final Change.
1. Quinia,	Colorless		Light blue.
2. Quinidia,	"		" "
3. Cinchonia,	"		" "
4. Asparagin,	"		" "
5. Strychnia,	"		" "
6. Atropia,	"		" "
7. Caffeia,	"		" "

2. Those which, at first, produce a characteristic color, and afterwards, with exception of meconin, change to a dark blue.

Alkaloids, etc.	First Color.	Second Color.	Final Change.
8. Santonin,	Light purple,		Dark blue.
9. Menispermia,	Light yellow,		" "
10. Solonia,	Yellow,		" "
11. Veratria,	Yellow green,	Dark brown,	" "
12. Meconin,	Light "		Light "
13. Codeia,	Green,		Dark "
14. Narcotina,	Yellow green,		" "
15. Phloridzin,	Dark blue,		Permanent.
16. Salicin,	Purple,	Blue, then brown red,	Dark blue.
17. Morphia,	Dark red,	Purple,	" "
18. Digitalin,	Crimson,	"	" "
19. Brucia,	Brick red,		" "
20. Aconitia,	Light yellow brown,	Brown,	" "
21. Piperina,	Brown red,		" "
22. Berberina,	Purple,		" "
23. Cubebin,	Crimson,		" "

This test gives an easy and delicate method of distinguishing between strychnia and brucia, and also for detecting the adulteration of quinia with either salicin or phloridzin. The first color produced may be regarded as the real reaction, as the final change is due to deoxidation.—*Amer. Jour. of Pharm.*

SULPHOVINATE OF SODA; THE NEW PURGATIVE.

Dr. Rabuteau, in 1870, pointed out to the Paris Academy of Medicine the advantages presented by sulphovinate of soda over most of the other saline purgatives. A certain and rapid action, a slightly sweet and agreeable flavor, great solubility in water, thus combining every quality to attract the attention of therapeutists.

M. Limousin has undertaken the researches necessary to the institution of a process, certain and of slight cost; and after some months of experiment he has arrived at the following result, which he has recently submitted to the Pharmaceutical Society of Paris.

Take 1 kilogramme of pure sulphuric acid at 60°, and 1 kilogramme of alcohol at about 96°: by means of two funnels, one containing acid, the other alcohol, carefully introduce the two liquids into a third funnel arranged on a beaker plunged in a freezing mixture or a stream of cold water. Pieces of glass are arranged in the socket of the funnel so as to regulate the flow of the two liquids into the beaker in such a manner as to admit an excess of alcohol in relation to the proportion

of acid. The prepared mixture is left in contact during four or five days at a temperature of 20° to 25°; the liquor being then diluted with five or six litres of distilled water is saturated with about 1.500 grammes of pure carbonate of baryta. When the liquor is neutralized and the sulphate of baryta well deposited it is filtered.

There is also in solution some sulphovinate of baryta that may be transformed into sulphovinate of soda by precipitation by carbonate of soda. The clear liquor is evaporated on a bath until it marks 36° or 38°, and is then allowed to crystallize.

With the given quantities, we can obtain about one kilogramme of salt. In this preparation it is necessary to take into account certain points insisted upon by M. Limousin. It is necessary to employ for the saturation pure carbonate of baryta prepared in the laboratory, in preference to the natural salt, the latter always containing foreign salt. The artificial carbonate, although high in price, is but a first expense, since it is regenerated in the subsequent operations. Carbonate of lime does not give good results, as the sulphovinate of soda is not freed from a certain quantity of chalk which interferes with crystallization. The alcohol should be well rectified, or empyreumatics are produced, which continue in the acid and impart to the salt a disagreeable odor. This can easily be ascertained by heating a small piece of salt in a capsule over a spirit lamp. At about 130° the salt, which easily melts, expands and allows the alcohol to escape, which can then be ignited. The residue of bisulphate of soda is white when the alcohol is very pure, and more or less colored when containing empyreumatics. The sulphovinate of soda crystallizes in hexagonal tablets, containing 10 to 100 parts water. It is soluble in about its own weight of water at 18°. When dissolved, the temperature falls to 13°. It has a refreshing flavor, with very slight bitterness, and a sweet after-taste. It is much more pleasant than many of the purgative sulphates now used, and M. Limousin thinks it preferable in flavor to citrate of magnesia.

Its purgative action is intense and rapid: 10 to 15 grammes suffice for a child, 20 to 25 grammes for an adult; and it does not cause subsequent constipation. It can be flavored with, and used with syrups, such as currants, cherries, raspberries, and lemons, and its great solubility permits the reduction of the medicament to a small space. It can be dissolved either in pure or carbonized water.

M. Limousin shows another advantage to which we cannot attach too much importance. It does not cause the formation of calculus of ammonia-magnesia phosphate, as when salts of magnesia is employed. Judging from the frequent occurrence of calculi of this nature, salts of magnesia must have been used, and not always discharged in the urine, allowing a perceptible quantity of phosphate of ammonia-mag-

nesia to remain, and the crystals to form an important part of the residue deposited as soon as decomposition commences.

At a recent meeting of the Paris Society of Pharmacy, M. Bussy stated that, having had occasion to examine several specimens of sulphovinate of soda, he had found that some of them contained varying proportions of bisulphate of soda. This he considered to be probably due to partial decomposition of the sulphovinate, through being subjected to too high a temperature during its preparation. This view of the question was agreed in by other speakers; and it was also stated that sulphovinate of soda is decomposed by simple prolonged contact with water, especially when heated; it then becomes acid, and a precipitate is formed upon the addition of a solution of chloride of barium. Freedom from such a contamination in the sulphovinate of soda is the more important, since it is usually prescribed in considerable doses. The interest which this subject excited has led to the publication by Berthelot (*Journ. de Pharmacie*, vol. xvii., p. 257, and *Pharm. Journ.*, April 26, p. 843) of an important letter, detailing the results of his investigation of sulphovinic acid and the sulphovinates. In order to induce the formation of sulphovinic acid in its most stable form, he states that it is necessary to raise the temperature of the mixture to 100° C., and maintain it for a short time; but this point should not be exceeded, nor should the mixture be subjected to it too long, or a more complex reaction takes place. Both in the formation of sulphovinic acid, and in its decomposition in the presence of water, the reaction stops when a definite equilibrium is established between the alcohol, sulphuric acid, sulphovinic acid, and water. Excess of water retards the formation of sulphovinic acid, and lowers the proportion produced. When water is added to sulphovinic acid or a sulphovinate, it causes decomposition and reproduction of acid and alcohol slowly in the cold, but more rapidly as the temperature is increased, until an equilibrium is established; and when once the decomposition of a sulphovinate is commenced, it progresses in a gradually accelerated ratio. Berthelot recommends, therefore, that solutions of the sulphovinates should be maintained in a neutral or slightly alkaline state during evaporation or preservation, by adding to the solution a little neutral carbonate or bicarbonate, which will remain in the mother-liquors after crystallization. The presence of the alkaline salt retards the decomposition, without, however, preventing it altogether.—*The London Med. Record.*

ARTIFICIAL FRUIT ESSENCES.

Dr. Henry K. Oliver, in a report, prepared for the State Board of Health of Massachusetts, on the character of the substances used

for flavoring articles of food and drink, gives much interesting information respecting the use of artificial fruit essences. The compound ethers which have been found to possess the odor and flavor of several fruits are several in number.

Butyric Ether.—This ether may be prepared by mixing butyric acid with sulphuric acid and alcohol. The former acid may be made by mixing decaying cheese with grape-sugar and chalk, and allowing fermentation to take place. The ether is dissolved in another portion of alcohol, and forms the pine-apple essence.

Pelargonic Ether, Oxiranthic Ether, may be prepared by digesting pelargonic acid with alcohol at a gentle heat. The acid is the result of the action of nitric acid on oil of rue. The ether is dissolved in alcohol, and forms the quince essence.

Acetate of Amylic Ether is prepared by distilling a mixture of fusel oil, acetate of potash, and concentrated sulphuric acid. An alcoholic solution of the ether forms the jargonelle pear essence.

Valerianate of Amylic Ether may be made by the action of sulphuric acid and valerianic acid upon fusel oil. An alcoholic solution of this ether forms the apple essence.

A mixture of acetate of amylic ether with butyric ether forms the banana essence. Other mixtures of the ethers, modified by the addition of various agents, as nitrous ether, acetic ether, acetic acid, camphor, tincture of orris, vanilla, the volatile oils, etc., result in imitations of other fruits, the strawberry, raspberry, apricot, currant, etc., etc.

In answer to the question whether these artificial fruit essences are deleterious to health, Dr. Oliver says a succinct reply cannot be given. If taken into the stomach in any considerable quantity and in an undiluted form, the effect would, without doubt, be not simply deleterious, but highly dangerous. But in the form in which they are presented in confectionery, etc., they are more or less diluted; the chance, therefore, of harm following their occasional use is greatly lessened. But when diluted, habitual indulgence in them, according to the opinion of scientific men, cannot fail to be injurious to health; and deleterious results may follow their occasional use, even when in the diluted form: this may happen in the case of adults, on account of a peculiar idiosyncrasy. And in all cases, probably, Dr. Oliver thinks children are more susceptible to their influence than adults.

When the essences are used in syrups, a small portion of either citric or tartaric acid is used to give a slightly tart taste. Where, also, the syrup is to represent the flavor of any of the red fruits, as the strawberry, for instance, coloring matter must be added. This is generally made of cochineal. The sarsaparilla syrup, also, usually

receives a little coloring except when molasses is used, when the coloring substance is caramel.

In respect to jellies, an extensive manufacturer informed Dr. Oliver that he "formerly kept jellies from the pure fruit, but found it didn't pay, and now keeps none at all. Those now kept are made from apples, properly colored and flavored with the artificial essences bought in New York. Pays the highest price for these essences. The jellies cannot be distinguished by customers from those made of pure fruit; the latter are really no better."

In respect to the use of the essences in the fabrication of factitious wines and other alcoholic liquors, it is sufficient to quote the following extract from the business circular of an eminent master in the trade:—"Liquors made according to the receipts given" (several of which Dr. Oliver cites) "so closely resemble the genuine that they often cannot be distinguished. They answer, for all the same intents and purposes, as the flavors for preparing them are identical with those which are formed naturally during fermentation. Modern chemistry, which has by analysis discovered the existence of these ethers in wines and distilled liquors, has also found other more abundant sources for them, rendering it highly advantageous to employ the latter."—*The Practitioner.*

Distinguishing Creasote from Carbolic Acid.—It is well known that carbolic acid from coal tar so closely resembles creasote from wood tar in its chemical and physical properties that the former is often sold under the name of creasote. Several methods have been proposed for distinguishing the one from the other. Among these an aqueous solution of baryta, an alcoholic solution of chloride of iron, as well as glycerine, have been suggested, but none have proved entirely satisfactory.

Mr. A. M. Read, in a thesis read before the National College of Pharmacy, at Washington, D.C., gives the results obtained with aqua ammonia, and recommends its use for distinguishing the two. Carbolic acid dissolves in an equal volume of aqua ammoniæ fortior, sp. gr. 0.900, and upon standing acquires a beautiful violet blue color. Common creasote he found to be insoluble in ammonia, but in a short time it acquired a light blue color. Upon Morson's creasote ammonia had no effect whatever, neither dissolving it nor giving it the blue color that it gave to common creasote. Merck's creasote gave the same results. Although most text-books state that carbolic acid is insoluble in ammonia, Mr. Read's experience proves the contrary, and offers a convenient test, if truly reliable.

The Solvent Action of Papaya Juice on the Nitrogenous Articles of Food.—Assistant-Surg. Gopal Chunder Roy has written an interesting paper on this subject in the *Calcutta Journal of Medicine*. The power of the papaya-tree and its juice to render meat tender is a matter of popular belief in India. Dr. Roy's experiments confirm the truth of it. They were conducted at Netley under Dr. Parkes's notice, and are detailed at length in the paper referred to. The juice, or a solution of it, undoubtedly softens, digests, or dissolves meat, albumen or gluten. Dr. Roy compares the action to that of a ferment, and suggests the administration of a few grains of the dried juice after meals in cases of indigestion depending on a deficient secretion of gastric juice.—*Medical Times.*

Azaderachta Indica.—Mr. Broughton, Government quinologist, Madras, has recently (according to the *Indian Medical Gazette*, April 1, 1873) made a very careful analysis of the Margosa or Nim tree. He has found a bitter resin in the bark, slightly soluble in water, and entirely soluble in alcohol, having the formula C_{30} H_{50} O_{11}. There is a hydrate of this resin in the leaves, which is more soluble in water. Mr. Broughton states that the bitter resin is not an alkaloid, and cannot be considered a periodic, though it is doubtless a good tonic.

Cheap Pepsin.—Dr. Folsom, of Portsmouth, N. H. (*Boston Med. Jour.*), takes the "inside" of the gizzards of chickens and other fowls, or the stomachs of calves and young pigs, dries them thoroughly and then rubs them into powder, the third of a teaspoonful of which may be given before eating, mixed with syrup.

Striated Ipecacuanhas.—M. Planchon has published (*Journ. Pharm. et de Chim.*, xvi. 404, xvii. 19, and *Pharm. Journ.*, iii. 521, 642), the results of an exhaustive investigation into the origin of the ipecacuanhas known as "striated." He finds that there are two kinds, differing so much in their dimensions that he designates them respectively "major" and "minor." The former is distinguished from the latter by the complete absence of starch, the relatively small diameter of the vessels of the meditullium, and the presence of a principle capable of reducing the cupro-potassic reagent; it contains but very little emetine, about 2½ per cent. The "minor" variety is marked by the presence of starch, the relative development of the liber zone, and the larger size of the vessels in the middle of the woody layer; it contains about 6½ per cent. of emetine. The "major" variety he attributes without doubt to *Psychotria emetica;* the origin of the "minor" is not at present cleared up, but he con-

siders it probable that it will prove to be referable to a plant very near to *Richardsonia scabra*, the origin of white or undulated ipecacuanha. What is very curious is, that although striated ipecacuanha has long been referred to *Psychotria emetica*, the source of the "major" variety, there can be little doubt that the "minor" variety has been looked upon as the typical form. This is evidenced by its use for lecture-room illustrations, by the record of analyses describing it as containing starch, which is absent from the "major" (*P. emetica*), as well as a larger proportion of emetine.

Koussine is an excellent vermifuge, and is given in the morning in doses of 1.25 grammes in a little syrup.

The Sulphates of the New Cinchona Alkaloids as Substitutes for Quinine.—The final report of the Madras Cinchona Commission, dated April 18, 1868, printed in Parliamentary Blue-Book No. 432, East India (Cinchona cultivation), embraces a large field of inquiry, and is based on data of unquestionable character. The report establishes that quinine and quinidine are equal in febrifuge action, that cinchonidine is only slightly less efficacious, and cinchonine, though considered somewhat inferior, is notwithstanding a valuable remedial agent in fever. These results are very conclusively shown in the subjoined tabular statement taken from the report in question :—

	No. of persons treated.	No. of cases in which less than 20 grains checked the paroxysm.	No. of cases which required 20 grs. and upwards to check the paroxysm.	Percentage of cures effected with less than 20 grs.	Percentage of cures effected, 20 grains and upwards.
Quinine, chemically pure....	416	320	96	76.92	23.07
Quinidine.....	412	312	100	75.72	24.27
Cinchonidine.....	323	242	81	74.92	25.07
Cinchonine.....	385	282	103	73.24	26.75

Metachloral, according to Dumas, is prepared by placing in a bottle with an emery stopper some chloral with five or six times its weight of sulphuric acid. The next day the chloral is transformed into metachloral, which must be well washed with water to remove the sulphuric acid. It is a coarse, white powder, smelling strongly of chloral, hardly soluble even in boiling water, and distilling between 150° and 200° Cent. without melting. Regnault has shown that it is similar in composition to chloral, and its formula is $C_4 HC_3 O_2$, being

simply an isomeric modification of chloral. Dr. Dujardin-Beaumetz, of Paris, has experimented largely in the local application of chloral as a caustic or modifying agent, and a local anæsthetic. It may be applied in substance, which mode is rather difficult, or in solution of different strength—namely, one or two per cent. in water or glycerine. Metachloral is applied in powder upon foul wounds, replacing, advantageously, iodoform, the smell of which is so disagreeable. Cases are given where the application of chloral has been of much use in gangrene, phagedæna, rodent ulcers, lardaceous ulcerations, certain diseases of the skin, lupus, and for modifying the cavities of abscesses, etc. It is of much value in relieving the pain of cancerous ulcerations; and, as chloral possesses the property of preventing decomposition of the urine, Dr. Beaumetz thinks that in certain diseases of the bladder it may be usefully injected into that viscus.

Restoration of Chloroform which has been Injured by Age.—Mr. E. B. Shuttleworth says:—"Although the nature of the changes induced in chloroform by the agencies of time, light, moisture, and atmospheric exposure, have never been precisely determined, I am inclined to think that by far the most general and injurious products of decomposition are chlorine and hydrochloric acid. In samples of imperfectly rectified chloroform, as that of ordinary German manufacture, these impurities are, after the lapse of some months, easily recognizable; and in the course of one or two years, an aqueous layer, containing these products in solution, may often be found floating upon the chloroform. Traces of sulphuric acid quickly induce this change. When that liquid has been employed as the purifying agent, and has not been completely removed by repeated washings and rectifications, the product will very soon give sharp indications of chlorine, or some of its acid compounds. In the process of purification adopted in the British Pharmacopœia, the chloroform, after treatment with acid, is mixed with the lime and chloride of calcium, and is at once rectified. I think the keeping qualities of the product would be much improved by agitating the chloroform, before being rectified, with a solution of carbonate of soda, followed by water.

In regard to the restoration of that which has become spoiled, I would recommend that the chloroform be well agitated with a dilute solution of hyposulphite of soda. It should then be separated by means of a glass funnel from the supernatant liquid and again washed; this time with simple water. After being separated, the chloroform should be passed through filtering paper to free it from traces of moisture, when it will be found much improved, and comparatively sweet; good enough, in any case, for external use.

In the manufacture of chloroform I have found that one washing with hyposulphite of soda is more effectual than three with simple water. The quantity of hyposulphite used may be so small as to be of no injury to the succeeding charges of chloroform, to which it is customary to add former washings.

There are, of course, certain other impurities of chloroform, whether chlorinated or not I cannot say, which the hyposulphite will not remove. These are of a more stable character; and as they possess a higher boiling point than chloroform, may be separated by distillation, or by treatment with sulphuric acid in the usual manner."—*Canad. Phar. Journal.*

The Preservation of Ether.—A LIEBEN (*Ann. d. Chem. und Pharm. Supp.* 7, p. 221), after describing a test for pure ether—shaking it with water and treating with iodine and potash, when if pure no iodoform is formed—says that he has observed that it is very difficult to obtain pure ether, since simple contact with water, at ordinary temperature, and more rapidly at 100° C., causes it to become contaminated with alcohol. He finds that ether, purified by distilling it once or twice over sodium, chloride of calcium tubes being fitted to the apparatus to prevent contact of moist air, may be kept in well-stoppered bottles for several months without alteration. It will keep also when in contact with perfectly dry and previously thoroughly ignited caustic potash, recently burnt lime, carbonate of potash, or with pure sodium; but it cannot be kept with water, chloride of calcium, chloride of sodium, or anhydrous sulphate of copper, because when in contact with those substances it is gradually altered.—*The London Med. Record.*

The Dose of Muriate of Baryta.—MR. HENRY KENNEDY, writing to *The Medical Press and Circular*, expresses his surprise at the dose of this medicine as given in the standard works of the day, in which he finds it put down as ranging from half a grain to two grains. He says: "It is further added, at least in some of the works, that in doses of an ounce it would prove poisonous. . . . . I have been in the habit of using it for many years, and can state that the proper dose is from the twelfth to the sixteenth of a grain. Very few will bear the eighth. In fact it is very analogous to the corrosive muriate of mercury; if an overdose be given it will produce precisely the same violent effects. To talk of an ounce, under these circumstances, being poisonous, is manifestly absurd."

Ointment of Oxide of Zinc.—E. A. ALDEN (*Amer. Journ. Pharm.*) says that a good way of preparing this ointment is to rub the zinc oxide with a small quantity of glycerine to a fine smooth paste, and

then mix with the benzoinated lard. A perfectly smooth ointment is thus readily obtained, which is free from any rough or gritty feeling when rubbed on the skin. He also finds glycerine to be the best excipient for making oxide of zinc pills, care being taken not to make them too soft.

Moulding of Suppositories.—The same writer recommends the use of the common metallic moulds, and that before filling, the operator should breathe into each one separately, so as to form a coating of moisture; then put in a small quantity of lycopodium, and empty. This leaves a coating of lycopodium, which allows the suppository to leave the mould freely, after casting.

Disguising Cod-Liver Oil.—According to Duquesnel, the addition of tincture of eucalyptus globulus, in the proportion of one or two per cent., has the effect of disguising the taste of cod-liver oil to a marked extent, renders it more easily digested and removes the inclination to eructation so frequently observed when pure cod-liver oil is taken.

Owing to the extreme volatility of the aromatic constituents of the tincture, the mixture must be kept in well-stoppered bottles.—*American Practitioner.*

Resina Copaibæ.—Dr. Wilks, of Guy's Hospital, recently (*Lancet*, March 21, 1873) reported that he had successfully used the resin of copaiba, from which the pharmacopœial oleo-resin had been separated, as a diuretic, and found it to present a great advantage over the ordinary drug, in the absence of the odor which makes it very difficult for patients to take the oleo-resin. In doses of fifteen to twenty grains three or four times a day, he has found the resin to possess marked diuretic properties. His former communication having induced numerous inquiries, Dr. Wilks now (*Lancet*, June 21) publishes the formula for its administration which has been advised by Mr. Gerrard, the late dispenser at the hospital.

Resin of copaiba	3 drachms.
Rectified spirit	5 "
Spirit of chloroform	1 drachm.
Mucilage of acacia	2 ounces.
Water to make	12 ounces.

An ounce (containing 15 grains) to be taken three times a day.

Dr. Wilks has also administered the resin in the form of pills, each containing 5 grains of the resin, three of which were taken three times a day.—*The London Med. Record.*

Betel-Nut Chewing.—"There is a fascination in betel nut," says an Eastern correspondent of the *Mail*, London, "more extraordinary than in a tobacco passion. When the habit is established, there seems no retreat. Each victim wears out his teeth, gums, and digestion, and dies with an unsatisfied longing for another quid. The betel-nut tree thrives in most parts of tropical India, the Indian Archipelago, and the Philippine Islands, growing up gracefully about thirty feet, rarely more than eight inches in diameter. It is the *Areca catechu*. Penang is the universal name of the nut in those places where it is produced: hence Pulo Penang means a betel-nut island. At six years of age the tree commences bearing nuts of the size of a small pullet's egg of a bright yellow color, enclosed in a husk similar to the cocoa-nut; within is a spherical nut very much like a nutmeg. Broken, a bit of it is wrapped up with a piece of unslacked lime in a peculiar leaf, the siri betelpiper, extensively cultivated for that purpose. The gums and mucous membrane of the mouth are quickly stained a brick-red; the teeth crumble to a level with the gums; and in that condition an inveterate betel-chewer is wretched without a supply. There are large plantations of betel-nut trees in Java to meet the demand for home consumption and distant provinces. To augment the pleasure, those who can afford it add tobacco to the lime."—*Brit. Med. Journ.*

The Coloring Matter in Cantharides.—An investigation of the coloring matter of cantharides by means of the spectroscope (*Pharm. Journ.*, vol. iii. pp., 681 and 949) has led Mr. Pocklington to the conclusion that the green coloring matter consists of chlorophyll, derived from the plants on which the insects feed. With the view of ascertaining the absolute identity of chlorophyll with the chlorophyll-like substance obtained from cantharides, he made a number of comparative experiments with the leaves of plants on which the insects were likely to have fed. Estimating as nearly as possible the changes which the coloring matter of the cantharides may have undergone from age, exposure, etc., and submitting the chlorophyll to similar con ditions, he has obtained spectra with elm, privet, lilac, and elder leaves, almost identical with those given by various specimens of flies. He therefore thinks it possible to tell, by means of the spectroscope, from what feeding-ground an insect may have been gathered, and from what kind of plant it ate its last meal, although it may have been dead ten years.

Meconate of Quinine.—P. T. Austen describes (*American Chemist*, May 24) a salt of quinine prepared by adding an alcoholic solution of meconic acid to alcoholic solution of quinine. A white curdy precipitate is formed which is soluble in hot water, and deposited

on cooling in beautiful crystals. The water solution gives reactions for both quinine and meconic acid. The first curdy precipitate on drying forms a mass resembling dried glue; the next precipitate forms minute scales of a silken lustre. Finally, small crystals are obtained. When filtered and dried upon bibulous paper, the salt has a peculiar sheen resembling minute fish-scales. Analysis of the salt showed that its composition is most probably $C_7H_2(C_{20}H_{24}N_2O_2)''O_7$, which corresponds to the silver salt $C_7H_2Ag_2O_7$.

Australian Medicinal Plants.—At the annual meeting of the Medical Society of Victoria (*Australian Medical Journal*, Jan. 1873) the president pointed out that an astringent principle exists in the red gum of the eucalyptus rostrata, which may yet become a valuable medicinal agent. The bark also yields an astringent principle in close alliance with tannin, but not actually tannin. A large number of the species contain essential oils, which vary much in character, some being rank, and adapted only as solvents of resins, gutta-percha, and caoutchouc; others have been much spoken of as antiseptics, useful in putrid fevers and fetid suppurations.

The eucalyptus amygdalina is used as a rubefacient, and is said to possess marked curative properties in rheumatism and other painful affections of the joints. The eucalyptol, which is the more volatile part of the oil, has been praised for purposes of inhalation in bronchial affections.

The essential oil of the atherosperma moschata—the native sassafras tree—in small doses, is described as diaphoretic, diuretic, and sedative, and it appears to exert a specific lowering influence upon the heart's action. It is said to have been employed successfully in cases of heart disease. An oil obtained from the leaves of this tree does not appear to have the same therapeutic quality as that from the bark. The tree itself also yields a fine aromatic bitter, which has been separated by a German chemist, and named atherospermin.—*The London Med. Record.*

Nitrate of Zinc as a Caustic.—M. Lefort describes (*Journ. de Pharm. et de Chimie*, May, 1873) a caustic paste prepared from nitrate of zinc, which has been reported on favorably by Drs. Clément and Desgrange, of the Hôtel-Dieu, Lyons. The nitrate is prepared by dissolving commercial zinc with heat in equal volumes of nitric acid and water, maintaining an excess of zinc, and concentrating until a slight basic precipitate is formed, which carries down any iron present. Boiling water is then added, and when cool the solution is filtered, and evaporated at a gentle heat until slight ebullition takes place; if then left to cool it forms a cake, which should be broken up and drained in a glass funnel. Of the nitrate of zinc so prepared, 100 grammes are

dissolved in 50 grammes of water, and afterwards incorporated with 50 grammes of wheaten flour. This forms a homogeneous paste, which remains soft, spreads easily over surfaces without afterwards contracting, and does not spread at the edges through absorption of moisture. When made into cylinders, it should not be dried by heat, as it slightly decomposes and becomes yellow and friable; it may be kept dry by placing it in a tin box with some pieces of quicklime, but not in contact with them.

A New Method of Dissolving Iodide of Lead.—M. Tommaso, in a memoir presented to the Royal Pharmaceutical Society of Brussels, suggests a new method of rendering iodide of lead soluble, with a view to making it practically useful in medicine. Alcohol, ether, chloroform, acetic acid, glycerine, etc., dissolve only traces of the iodide. It is soluble, also, in 1235 parts of cold or 194 parts of boiling water. It is freely soluble in solutions of hydriodic acid or of the alkaline iodides, forming with them double combinations. M. Tommaso adds to a solution of acetate of lead, acidulated by a few drops of acetic acid, a solution of iodide of potassium, to which has been added carbonate of soda. Carbonic acid is freely given off, and the yellow deposit of iodide of lead quickly dissolves.

By this method a more favorable combination can be made with glycerine in the treatment of uterine diseases, for application to the eyelids, etc. M. Tommaso prepares this glycerine by mixing in a porcelain mortar the following substances until the iodide of lead has entirely disappeared:—

Saturated solution of acetate of soda, 15 cc.; glycerine, 25 cc.; iodide of lead, 4 gr.; rose water, a few drops.—*The Druggists' Circular and Chemical Gazette.*

A New Destroyer of the Hair.—Under the above title Dr. Boettger, in the "Memorabilien," says that we possess a new material, for destruction of hair, of a most suitable description, in a mixture of one part of crystallized sulphydrate of sodium with three parts of fine carbonate of lime mixed and reduced to a very fine powder. This mixture may be kept any length of time without alteration in well-closed bottles. When moistened with a drop of water and laid, by means of the back of a knife, on the part of the skin covered with hair, we see change in a few minutes and find the thickest hair turn into a soft mass, easily removed by means of water. If it remain on the part long it will cause a slight irritation of the skin.—*Richmond and Louisville Journal*, Aug., 1873.

Extracts of Ergot.—In an inaugural thesis at the Paris School of Pharmacy, M. A. Verwaest has called attention to the great difference

in the solvents used in the preparation of extract of ergot, as ordered in the various pharmacopœias. In the British Pharmacopœia, the powdered ergot is to be exhausted with ether; the extract of the Austrian Pharmacopœia is an alcoholic one; that of the Belgian Pharmacopœia is aqueous; that of the French Codex is hydro-alcoholic; whilst the Pharmacopœia of the United States (1864) prescribes that the ergot shall be exhausted in a percolator with a mixture of dilute alcohol and acetic acid. So great a variation in the solvents used might reasonably be expected to yield products varying much in their physiological action. [To this list of variations may be added the fact that the new edition of the United States Pharmacopœia (1873) directs the powdered ergot to be percolated by a mixture of glycerine, alcohol, acetic acid, and water.—*Rep.*]

Iodine.—Inquiry is often made regarding the composition of the "iodine caustic" and the "compound tincture of iodine" of Churchill. By the kindness of Dr. William Neergaard, we are able to give the formulæ as follows: Churchill's iodine caustic is composed of "iodine, one drachm; iodide of potassium, two drachms; water, half a fluid ounce; mix." This mixture will be seen to be more than five times the strength of liq. iodinii co. of the U. S. Pharmacopœia, which it otherwise resembles. Churchill's compound tincture of iodine is: "Pure iodine, two and a half ounces; iodide of potassium, half an ounce; alcohol four fluid ounces; rectified spirit of wine, twelve fluid ounces; mix them." Each fluid ounce of this tincture contains seventy-five grains of iodine, five times as much as the tincture bearing the same name in the U. S. Pharmacopœia.—*New York Medical Journal.*

Iodized Syrup of Tar.—A memoir has recently been submitted to the Paris Society of Pharmacy (*Journ. Pharm. et Chim.*, 4th series, vol. xvii., p. 466), in which the author proposes to utilize an observation of Lefort, that tar-water suitably prepared dissolves in the cold a limited quantity of iodine, which combines or associates with the fixed or volatile principles contained in the tar-water in such a manner as not to be detected by the usual tests for free iodine. The tar-water is to be prepared by Lefort's process, with 100 grammes of semi-liquid tar to a litre of water at 167° Fahr. To the liquid, cooled and filtered, 1,800 grammes per litre of water is added, left to dissolve without heat, and then the whole is strained. To a kilogramme of this syrup one gramme of alcoholic solution of iodine is gradually added, shaking after each addition until absorbed. The syrup, at first a deep brown, is after a few days but slightly darker than ordinary syrup of tar; it does not color starch, has no taste of iodine, and is easily preserved. The Commission appointed to report upon the subject sug-

gested a variation of this process by dividing rapidly and carefully one gramme of iodine with 600 grammes of powdered sugar, incorporating 33 grammes of previously washed Norwegian tar, placing the mixture in a wide-mouthed bottle with 400 grammes of distilled water at 176° Fahr., agitating the whole until cool, and filtering. The filtration is slow, but can be made in the open air without fear of loss of iodine. The therapeutic properties of iodized syrup of tar have not been sufficiently investigated to allow at present a decisive opinion to be expressed respecting them.—*Lond. Med. Record.*

Infusion of Wild-Cherry Bark and Wild-Cherry Bark and Tar.—In a paper published in the *Amer. Jour. of Pharmacy* (June, 1873) Mr. J. B. Moore criticises the formula of the U. S. Pharmacopœia for preparing the infusion of wild-cherry bark, and says that an infusion prepared by water alone represents only the sedative properties of the drug, and contains but a meagre proportion of the bitter principle. Of this he says that glycerine is one of the best solvents, and proposes the following formula, which, he says, gives an infusion superior to the officinal one:—Powdered wild-cherry bark, ℥ ss. troy; Glycerine, f. ℥ ij.; Water (temp. 86°), Water, of each q. s.

Moisten the powder with six fluid drachms of the water at 86°, and allow it to stand for about two hours in an air-tight vessel at about the same temperature. Pack firmly in a percolator, and then pour on gradually the glycerine previously mixed with ten fluid ounces of water at 86°, and when all has passed, continue the percolation with water until one pint of infusion is obtained. A more concentrated infusion, with which the dose might be reduced from two or three fluid ounces to two or three tablespoonfuls, may be made by using double the quantity of bark.

An elegant and valuable combination of the properties of tar with those of wild-cherry bark may be formed in the following manner:—Tar (pure), 1 pint; Infusion of wild-cherry bark, 4 pints.

Add the tar to the infusion in a bottle or other suitable air-tight vessel, and set aside to macerate for two or three days, frequently stirring it vigorously with a stick, then filter through paper.

Glycerine being a good solvent of the medicinal virtues of tar, this compound infusion possesses the properties of the latter in a high degree. It may be administered in the dose of from one to two tablespoonfuls every two or three hours, as required. This infusion is not so liable to spoil as the simple infusion of wild-cherry bark; being strongly impregnated with the antiseptic properties of tar, it will in a cool place keep for a long time unchanged. The stirring part of the process is very important, as it breaks up the tar, and thus presents a larger surface to the action of the solvent.

TOXICOLOGY.

POISONING BY NITRO-GLYCERINE.

Dr. Honert reports a case of poisoning from nitro-glycerine, the second, he states, which has occurred. A man took a tablespoonful of gunpowder for a boil; and in order to increase the effects of the remedy, a small portion of nitroglycerine was afterward swallowed. He was immediately seized with great nausea, accompanied with repeated violent retching and vomiting, headache, dizziness, and occasional unconsciousness. Great excitement was set up, especially in the vascular system; perspiration rolled in streams from his face and limbs. After some time he became paralyzed. When Dr. Honert saw him, four hours after taking the poison, the whole voluntary muscular system was paralyzed, except the muscles of the face and eyes, which were only measurably affected. Deglutition was extremely difficult; heart labored; pulse 39, hard and full. Twenty hours after taking it, the pulse was 70, then 90, and the symptoms of poisoning gradually disappeared.

Mr. E. Nyström, of Sweden (also quoted by *Rept. of Med. and Surg.*, Sydenham publication), contributes an important paper on the toxicology of this substance. He points out the great danger involved in the extensive use of such a poison—sweet, colorless, and apparently innocuous. Already have three deaths occurred in Sweden from its administration. Mr. Nyström himself took a little more than the size of a pin's head. He perceived immediately a sweetish taste, then an uncomfortable sense of irritation in the throat, and after five minutes, headache, painful throbbing in the temples, and contraction of the masseter muscles, all of which symptoms disappeared in the course of an hour.

The first case of poisoning that occurred in Sweden by nitroglycerine was that of a girl aged thirteen years, who died in 1864 from drinking the poison from a flask. The second was that of a railway engineer, who fatally poisoned himself by mistaking it for beer. In an hour he was blue in the face, and speedily became delirious, insensible,

and comatose. His hands were frequently raised to his head; the face became red and swollen: there was dyspnœa, with loud mucous râles over the chest; and death ensued in six hours from taking the poison. On post-mortem, the brain and its membranes were found encysted, and yellowish serous fluid in the ventricles; the trachea, stomach, and kidneys hyperæmic. In a third case, a peasant had died in two hours from drinking an unknown quantity, mistaking it for brandy.

PHOSPHORUS POISONING.

M. Poulet stated before the French Academy of Science that phosphorus is always eliminated in the urine, when taken internally in the form of hypo-phosphoric acid, and that taking advantage of this, the existence of phosphorus poisoning can be readily recognized or disproved. To discover hypo-phosphoric acid in the urine, nitric acid should be added to it, and the whole heated to calcination. If the acid be present, as dryness is reached, the mixture suddenly bursts into flame, like a packet of matches.—*Gazette Médicale de Paris*, August 17, 1872.

OIL OF TURPENTINE AS AN ANTIDOTE IN PHOSPHORUS POISONING.

Dr. Herman Kochler, in a paper on the value and significance of the oil of turpentine containing oxygen in phosphorus poisoning (*Med. Chirurg. Rundsch.*), sums up his results as follows:—

Oil of turpentine, containing oxygen, is a reliable antidote of phosphorus.

The kind of turpentine, if of this or that species of pine, if German or French (in opposition to Vetter's statement, that only the latter has antidotal powers), is of no importance, if it has only not been rectified for some time, and contains oxygen.

The oil of turpentine *only* acts if introduced in the *stomach*, best by gelatine capsules; to emulsify the turpentine oil with the yolk of an egg is not advisable, as the latter contains the oil of the egg, which facilitates the solution of the phosphorus. For every 0.01 gramme phosphorus *one* gramme of oil turpentine as an antidote is sufficient.

The turpentine must be administered as soon as possible after the poisoning. Twenty-four hours after the introduction of the phosphorus the oil of turpentine does not act.

The beneficial action of the antidote is due partly to its containing free oxygen for changing the poisonous phosphorus to the non-poison-

ous phosphoric acid, and partly by combining with the phosphorus to form the turpentine-phosphorus acid, which is not injurious. This acid, which is only dangerous in very large doses, appears (like laurin and turp. oil camphor) to be eliminated unchanged by the kidneys. It and its salts rapidly absorb oxygen from the air, and oxidize to a resinous derivative of the oil of turpentine, containing phosphoric acid, and this rapid oxidation has prevented an analysis for the ultimate elements.

CHRONIC POISONING WITH CHLORAL HYDRATE.

In the June number of *The Practitioner* there is a paper translated by the editor of that journal from the writings of Dr. Ludwig Kern, detailing a series of morbid phenomena which appeared in the course of a continuous employment of chloral. The most prominent symptoms were extensive cutaneous erythemas, and pustular or papular exanthemata. The vessels of the head and face were first dilated; but in pronounced cases this condition extended downwards, following by preference the course of the larger nerve-trunks. Conjunctivitis, inflammations of the mucous membrane, and congestions in various parts of the body were also noticed. A very important symptom was an interference with respiration, sometimes slight and sometimes amounting to actual dyspnœa, endangering life. The effects of chloral upon the skin and mucous membrane, and the dyspnœa produced by it, may all be explained by the assumption that it operates upon the vaso-motor centre and the medulla oblongata, and that its paralyzing influence extends thence to the peripheral branches of the affected nerves.

There was another class of cases in which both the quality of the symptoms and their greater or less extension in the organism indicated a distinct change in the composition of the blood. They were attended with petechiæ, subcutaneous ecchymoses, colliquative diarrhœa, bronchitis, diffuse abscesses, high and continued fever, and all the symptoms of profound blood-poisoning.

Delirium Tremens after Chloral-Drinking.—Dr. George F. Elliott (*Lancet*, May 24) relates an interesting case where the excessive use of chloral produced inaptitude for exertion, muscular pains in the upper extremities, loss of appetite, great thirst, constantly fetid breath, constipation, and finally a semi-comatose condition. The patient, a man æt. 35, had been in the habit of taking fifteen grains of opium daily for many years, but had for a few weeks substituted chloral, taking two hundred grains in the twenty-four hours. Its with-

drawal produced at first sleepiness, and then all the phenomena of delirium tremens, which subsided under the use of large doses of tartar-emetic and opium.

Amaurosis Resulting from Poisoning with Morphia.—A case of this character is reported by Dr. W. Wagner, of Odessa, in *Schmidt's Jahrbücher* for 1873. The patient, a man 32 years of age, suffered from periodical attacks of vomiting, for the relief of which he had recourse to injections of morphia.

Having been attacked by this disease while upon a journey, during five days, he had prepared solutions containing 1.92 grammes of the acetate of morphia; but it is not probable that he used the whole amount. Dr. Wagner found the patient drowsy, with a small and slow pulse, both pupils contracted and fully immovable. The arteries of the retina were very much contracted; the veins normal. The light of a brightly-burning lamp was not perceived. In this state the patient remained for two days. Further observation was prevented by the removal of the patient by his wife without the permission of the doctor.

"Mrs. Winslow's" Soothing Syrup.—In the City Registrar's report of Providence, Rhode Island, for July, Dr. Snow says:—

"There were two deaths in July from poisoning; one was from an overdose of morphine; the other from Mrs. Winslow's Soothing Syrup. There ought to be some power to stop the sale of a rank poison like Mrs. Winslow's Soothing Syrup under the false pretence that it is perfectly safe."

Arsenic in Lamp Shades.—A German doctor has described two cases in Jena and one in Frankfort, where persons using green glazed paper shades were attacked with symptoms of arsenic poisoning. In no case did the symptoms cease until the use of the shade was discontinued. The heat of the lamp volatilizing the arsenic, renders the small quantity present very dangerous.—*Exchange.*

How to Detect Alum in Bread.—One drop of the alcoholic extract of logwood let fall upon pure bread or pure flour gives a color brownish-yellow. If the flour contain alum in the proportion of one or two per cent., the color is gray or grayish-violet; with half per cent., the spot is yellowish-red, with a border of bluish-gray, and little blue points may be discovered in the disk with a lens; with a quarter per cent., the bluish border is no longer visible, but the points may still be detected. This is the limit of the reaction.—*Mouvement Médicale.*

Another rough-and-ready test frequently employed by military men

in the inspection of the bread supplied as a part of the soldier's ration is mentioned by the *Medical Press and Circular*. It consists in heating to a "tolerably high degree" the blade of a knife, then plunging it into a suspected loaf, and allowing it to remain until cool. On extracting it, if alum be present, a sufficient quantity will have been deposited on the blade to give its characteristic taste.

Tea-Drunkards.—Dr. Arlidge, one of the Pottery Inspectors of Staffordshire, has put forth a very sensible protest against a very pernicious custom which rarely receives sufficient attention either from the medical profession or the general public. He says that the women of the working-classes make tea a principal article of diet, instead of an occasional beverage. They drink it several times a day, and the result is a lamentable amount of sickness. This is no doubt the case, and, as Dr. Arlidge remarks, a portion of the reforming zeal directed against intoxication might be wisely diverted to the repression of this very serious evil of tea-tippling among the lower classes. Tea, in anything beyond moderate quantities, is as distinctly a narcotic poison as is opium or alcohol. It is capable of ruining the digestion, of enfeebling and disordering the heart's action, and of generally shattering the nerves. And it must be remembered that not merely is it a question of narcotic excess, but the enormous amount of hot water which tea-bibbers necessarily drink is exceedingly prejudicial both to digestion and nutrition. In short, without pretending to place this evil on a par as to general effect with those caused by alcoholic drinks, one may well insist that our teetotal reformers have overlooked, and even to no small extent encouraged a form of animal indulgence which is as distinctly sensual, extravagant, and pernicious as any beer-drinking or gin-swilling in the world.—*Boston Medical and Surgical Journal.*

Lead Poisoning Caused by the Use of a Hair Preparation.—The *Annales de la Société de Médecine de Gand* (Belgium) relates the case of Mr. R. W., aged fifty-five, who was suffering from muscular rheumatism, affecting chiefly the deltoid and other muscles of the shoulder; the patient had also lost the use of both arms. Dr. Crocker, the attending physician, had the painful parts wrapped up in cotton wadding, and prescribed lime juice and narcotics. A great improvement was rapidly felt, but it only lasted a short time, for a month afterwards the patient's fingers were struck with paralysis. No blue tinge could be seen on his gums, though he had suffered with severe colics at various times. The water used for drinking purposes was obtained from a brick well and kept in wooden pails; the culinary utensils offered nothing worthy of notice.

At last, after long researches, Dr. Crocker discovered that, for the fifteen years preceding, his patient had been in the habit of using for blackening his hair a certain liquid that he prepared himself by adding to a pint of water two teaspoonsfuls of sugar-of-lead and three teaspoonfuls of sulphur. This he used to apply to his hair at least once a week. The physician stopped entirely the use of the mixture, and under the influence of electricity and the use of iodide of potassium the colics disappeared, and the patient recovered entirely.

Nottonia Grandiflora as a Remedy in Hydrophobia.—At a recent meeting of the Royal Horticultural Society, the subject of the employment in the neighborhood of Bombay, of *Nottonia grandiflora* as a remedy in hydrophobia was brought forward, and a reference made to the statements of Major Wheeler in the *Times* not long since, to the effect that six men under his charge having been bitten, an infusion of the stem of the plant was administered to five, who recovered, the sixth, who refused to take it, having died. To Dr. A. Gibson is due the credit of having introduced the properties of this plant to notice in India. It is a succulent belonging to the Compositæ, and is found in dry rocky places in the Madras Peninsula. The following notes on the administration and its effects is from the Pharmacopœia of India:—"About four ounces of the freshly-gathered stems, infused in a pint of cold water for a night, yield in the morning, when subjected to pressure, a quantity of viscid greenish juice, which, being mixed with the water, is taken at a draught. In the evening a further quantity of the juice, made up into boluses with flour, is taken. These medicines are directed to be repeated for three successive days. From official documents placed at the disposal of the editor by Dr. Gibson it appears that the remedy has been tried in numerous cases, but as at the time of the infliction of the wound caustic was applied locally in the majority of cases, it is difficult to determine how far the *Nottonia* operated, if at all, as a prophylactic. Further trials may solve the question."—*Pharm. Journal.*

The Dose of Carbolic Acid.—The following case, reported by Dr. U. G. Colton, is of interest, as showing that we may yet be unacquainted with what should be the proper dose of carbolic acid in some instances: "Mrs. Moffitt, aged 70, was suffering from diarrhœa, for the relief of which she requested her husband to pour out twenty-four drops of laudanum. He by mistake gave her that amount of crude carbolic acid. It "burnt" the mucous membrane of the mouth and throat considerably, and produced a moderate amount of nervous prostration, which did not last long. She at once was aware there had been a mistake made, but thought the drug taken was "pain-killer." In

about an hour afterwards the discovery was made that carbolic acid had been taken, and milk was then freely used as an antidote. The evil which resulted was immediate, but immaterial, and the good accomplished was the relief of the diarrhœa. I would not recommend twenty-four drops as a proper dose of this fluid, but have an idea that one drop is rather homœopathic."—*The Medical Times.*

Fatal Poisoning from Chlorate of Potassa.—In the Pacific *Medical and Surgical Journal*, for June, Dr. A. M. Ferris gives a case of supposed poisoning from chlorate of potassa, where a "large spoonful" of the salt was swallowed through mistake, and was followed by congestion of the surface, blue lips, cold extremities, inability to empty the bladder, hæmaturia, and death. At the post-mortem examination the auricles were found filled with large coagula, and the ventricles empty and contracted. The lungs and abdominal viscera were healthy. As the brain and kidneys were not examined, absolute proof appears to be wanting that the symptoms were really due to the salt of potash.

Test for Picric Acid in Beer.—Picric acid has the property of dyeing woollen yarn a permanent yellow; and a piece of white yarn suspended in a glass of beer will take out all the picric acid, especially when heated on a water-bath, after acidifying with hydrochloric acid. As there are other coloring substances in beer which combine to give a dirty brownish-yellow color to the yarn, the following method, according to Brunner, is most satisfactory: The yellow-colored yarn which was suspended in beer is warmed with aqua ammonia, and the solution filtered and concentrated by evaporating on a water-bath to a very small quantity. To this residue is added a few drops of a solution of cyanide of potassium. If a trace of picric acid is present, a red color is produced from the formation of isopurpurate of potassium. By this method one milligramme of picric acid has been detected in a bottle of beer.—*Journal of Applied Chemistry.*

Poisoning by Chlorhydrate of Aniline.—M. Lallier records two cases of poisoning from the application of chlorhydrate of aniline to the skin in the treatment of obstinate psoriasis (*Medical Times and Gazette*, June 24). The first patient, forty-nine years of age, had suffered from psoriasis for thirty-two years, having been submitted to all kinds of treatment without effect. A solution diluted to $\frac{1}{4}$th was applied at 6 P.M. to the forearm, and an hour and a half afterwards vomiting came on, which recurred fifteen or twenty times. There was also incontinence of urine, but no diarrhœa. The face put on an algid, choleriform appearance. The patient passed a very restless night, and next morning the face and nearly all the body were in a

state of cyanosis, the pulse being 116 and small. There was neither intellectual disturbance nor cramps, but extremely severe pains were felt in the calves and heels. Next day all these symptoms had disappeared, save some pain in the heels which persisted. Believing that these symptoms might have been accidental, M. Lallier, at the request of the patient, made a second application on the third day after the first, the solution, diluted to $\frac{1}{200}$th, being applied to the front of the thigh. Two hours afterwards there occurred cephalalgia, invincible drowsiness, shivering, and dyspnœa, but no vomiting; cyanosis was again very marked, and the voice was lost. In twenty-four hours all morbid phenomena had ceased. The second patient, aged sixty-eight, had also psoriasis, which had baffled the ablest dermatologists during twenty years. A first application of the chlorhydrate diluted to $\frac{1}{800}$th produced no effect, but four hours after a second had been made next day (the dilution being the $\frac{1}{400}$th) the man became insensible and deeply cyanozed, although the respiration continued quite regular. The loss of consciousness continued a quarter-of an hour, but the cyanosis persisted during five hours, and was replaced by great pallor and cold sweats. The following night was without sleep. The urine was very red; there was no fever or vomiting.

From these two cases M. Lallier concludes—1. That in psoriasis the skin absorbs certain substances with great facility. 2. That the hydrochlorate of aniline in a moderate dose is a dangerous poison. This agrees with the facts published by M. Beaugrand in the article "Aniline," in the *Dictionnaire Encyclopédique des Sciences Médicales*. According to Starkow, of St. Petersburg, it produces analogous effects on the blood to those caused by ammonia and phosphoretted hydrogen, destroying the hæmoglobin without producing the ray of hæmatin in the spectroscope.

Cobra Poison has been analyzed and found to consist of carbon, .46; nitrogen, .13; oxygen, .325; sulphur, .025; the rest of hydrogen; this, as M. Dumas remarks, is exactly the composition of beer-yeast, and supports the idea that the cobra poison is of the nature of an animal ferment.

Snake-Poisoning in India.—The intravenous injection of ammonia in sufferers from snake-bite having unfortunately failed in India (whatever may have been its success in the hands of its originator, Dr. Halford, in Australia), renewed attempts have been made to counteract the poison by Prof. Fayrer, of Calcutta, than whom there is no higher authority on the subject. By a long series ef experiments he has ascertained that while none of the so-called "antidotes" are of

any avail, life may be prolonged and ultimately saved by artificial respiration. Dr. Fayrer found a strong analogy between the action of cobra poison and that of curare, the cure for the latter being the application of warmth to the body and artificial respiration. In this way, after apparent death for many hours, the poison is eliminated by the excreting organs, and the victim recovers. Curare parylyzes the peripheral expansion of the motor nerves, inducing asphyxia in the muscles of respiration. Cobra poison acts similarly, though Dr. Fayrer fears it may also do irreparable injury to the nerve-centres. Dr. Fayrer believes that, whatever the result when an overwhelming quantity of poison has been received, those cases in which a smaller quantity has been injected, and which, if left to themselves, would die, may by artificial respiration be saved. Acting on his suggestion, Mr. Richards, civil medical officer at Balasore, in the case of a dog, sustained the heart's action for ten hours, though convulsions had set in when he commenced artificial respiration. In another case he kept up the heart's action for twenty-four hours and thirty-five minutes. "The eyes had lost the glazed appearance, lachrymation was restored, and there was a winking of the lids on dropping water into the eye, attempts at deglutition when water was put into the mouth, and the heart beating vigorously."—*London Lancet.*

Poisoning by Alum.—Cases of this kind are so rare that the French authors, Desnos and Peveil, deny to alum any toxic properties. M. Tardieu does not mention it, though Orfila observed a case in a lady. Taylor alone reports a fatal case. A fatal case of poisoning by the ordinary potassium alum is reported in full by Dr. Hiequet (*Ann. d'Hygiène*, January, 1873), with the chemical analysis of the tissues, and remarks upon the toxicology of alum.

A man aged 57, took for some gastric trouble 50 grammes of a powder delivered to him as English salts as a purgative. Soon after its ingestion in a glass of water, he experienced a sense of burning constriction in the mouth, throat, and stomach; nausea, followed by bloody vomiting without stools; extreme malaise, insupportable anguish, frequent respiration, lypothymia; intelligence and senses remaining intact. In spite of all treatment he died in one hour.

A judicial investigation discovered the action of a poisonous acid throughout the length of the digestive tract. A chemical analysis showed the presence of calcinated alum.—*Bull. de Thérap.*, Aug. 15, 1873.

Aspiration in Poisoning.—A case is related by M. Dieulafoy in which an infant, six hours old, was poisoned by a dessert-spoonful of

laudanum, from whose stomach the poison was extracted by means of the pneumatic aspirator, before it had taken fatal effect.

Poisoning by Snails.—In the June number of the *Montpellier Médical*, Dr. Dumas relates the circumstances of a case of poisoning of seven individuals who had eaten snails at dinner. They were all affected with sickness, diarrhœa, giddiness, fever, etc. No doubt could be entertained as to the cause of the poisoning. The seven persons had all eaten of the snails, whereas they had not all eaten of the other dishes served up at the dinner. The pan in which the snails had been cooked was in perfect condition, and had been freshly tinned. The poisoning, therefore, took place through the snails themselves. It is well known that they often feed on poisonous plants, such as belladonna, digitalis, and hemlock, and on the fields from which the snails which were eaten had been gathered, were found boxwood, euphorbia, and prickwood. It is on account of this that snails gathered to be eaten are generally submitted to a few days' previous fasting.

The Urine in Lead-Poisoning.—M. Bouchard (*Société de Biologie*, July 11, 1873) states that the urine of persons actually suffering from lead-poisoning is considerably lessened in quantity. It is scarcely a half, a third, or even a fifth of the normal quantity. Its density is augmented, but this augmentation is far from being proportionate to the diminution of the fluid.

The coloring matter alone is increased; it is found in quantities from ten to twenty times as great as the normal. This proceeds from the rapid destruction of the globules, the cause of the speedy anæmia of persons poisoned with lead. When the lead ceases to act, the accidents disappear, the urine appears normal in quantity and in color; but disorder persists in the excretion of urea and uric acid which are much diminished. M. Bouchard attributes this diminution of urea and uric acid to a lessened disassimilation. The anatomical elements are oxidized, and furnish less urea.

PRESCRIPTIONS AND FORMULAS.

Papier Fayard et Blayn, or Papier Chimique.

THIS paper has a great sale in the United States for the cure of soft corns and bunions; in addition to which it was originally recommended for rheumatism and all painful affections, irritations of the chest, lumbago, wounds, ulcers, burns, etc. It is prepared as follows: Take of linseed oil 50 parts; picked garlic, finely cut, 3 parts; oil of turpentine, 50 parts; acetate of lead, 5 parts; yellow ochre, 3 parts; red oxide of lead, 1½ part. Place the garlic in the linseed oil in a large vessel over a gentle fire, and boil it until the garlic becomes very brown, stirring it constantly to remove the moisture; strain through linen. Again expose the oil thus prepared over the fire and add the other substances; agitate the mixture, and by means of sponge spread it on tissue paper or paper muslin, in order to render it impermeable; hang the sheets on small sticks and allow them to dry for fifteen days.

The above is the original formula, as patented; the French Codex substitutes the following for it: Take of linseed oil 100 parts, picked and finely cut garlic 10 parts, oil of turpentine 80 parts, porphyrized red oxide of iron 40 parts, white-lead ground in oil 15 parts. Prepare as above.

When this paper becomes properly dried, by means of a brush or any other appropriate instrument, the following compound is spread, while warm, upon one of its surfaces. Take of olive oil 200 parts, pulverized red oxide of lead 100 parts (in summer 110), yellow wax 6 parts (in summer 10). Place the oil in a large vessel, and heat it over a lively fire; when it commences to evolve some vapors, gradually add the red oxide of lead with one hand, constantly stirring with the other by means of a long spatula, until it has ceased to swell up, and then continue the stirring, while it is yet over the fire, until the very last swelling up, which must be carefully watched, as a smoke is then evolved which it is prudent to avoid. Remove the vessel from the fire, continuing the stirring up to the moment of the formation of a whitish scum or foam; then add the wax, stirring still a few moments after its fusion, which is made with a crackling noise. It is necessary that the whitish foam be attained without going beyond it, in order to have a plaster neither too soft nor too dry and granulated. To apply it, cut a piece of the required size, and place it over the part previously dampened with a little saliva, or tepid water; or, warm the plastered surface of the chemical paper before a fire, and then apply.—JOHN KING, M.D., in *Eclectic Medical Journal.*

Solubility of Sugar in Dilute Alcohol and in Water.

100 parts (30 alcohol, 70 water) dissolve at 0° C., 65.5 parts of sugar; at 14° C., 67.9; at 40° C., 82.2 parts.

100 parts (50 of each) dissolve at 0° C., 45.9 parts of sugar; 14° 47′ parts; at 40° C., 68.4 parts.

100 parts (10 water, 90 alcohol) dis-

solve at 0° C., 0.7 parts; at 14° C., 0.9; and at 40° C., 2.3 parts.

Absolute alcohol dissolves nothing.

Pure water dissolves at 0° C., 65 parts of sugar per 100; at 15° C., 66.1 parts; at 30° C., 69.8 parts; at 50° C., 82.7 parts. —M. SCHEIBLER, *Deutsche Chemische Gesellschaft.*

Tartrate of Sodium a Substitute for Citrate of Magnesium.

Dr. A. W. Miller, in the *American Journal of Pharmacy*, offers the following formula for an effervescing solution of tartrate of sodium, which he believes is destined to supersede the now popular citrate of magnesia. The advantages claimed for this solution are freedom from any tendency to precipitation, and cheapness of material. Its efficiency as a purgative is equal to that of the older preparation, while it has less tendency to produce griping, and is quite as pleasant to the taste. The formula, devised by Mr. J. Landschütz, is as follows:

Tartaric acid (crystallized). ℥ ix.
Sodium carbonate (cryst.).. ℥ xvij.
Sodium bicarbonate..... ℥ ix. + ℈ i.
Water, a sufficient quantity.

Dissolve the acid and the carbonate of sodium in about a quart of water; if necessary neutralize the solution by the addition of more acid or alkali; then dissolve in it the bicarbonate of sodium, filter, and add water to the measure of 147 fluid ounces.

Make a syrup from,

Best crushed sugar..... ℥ xxj.
Tartaric acid (cryst.)..... ℥ xiv.
Water..... ℥ x.

After cooling add one drachm essence of lemon. Measure into each bottle 1½ fluid ounce of this syrup, and fill the bottle with the first solution, pouring it in cautiously, so as to avoid admixture with the syrup; cork and tie the bottle immediately. Each bottle thus filled contains about seven drachms of dry tartrate of sodium, which is a fair adult dose.

Sulphate of Soda for Constipation.

A medical exchange says that thirty grains of sulphate of soda, and five or ten drops of nitro-muriatic acid, taken in a tumbler of water an hour before breakfast, has cured costiveness after other treatment has failed; the dose being gradually lessened as the ailment is overcome.

Administration of Turpentine in Pills.

In order to avoid some of the inconveniences attending the administration of turpentine, M. Lachambre recommends the following formula (*Journal des Connaissances Médicales*):

Oil of turpentine (well rectified)..8 grammes.
White wax .....20 "
Essence of lemon ..... 2 drops.
Powdered sugar ..... 9 grammes.

Melt the wax in the oil of turpentine, pour it into a mortar, and when cool add the sugar, and work into a mass. Divide into pills of 25 centigrammes each, which should be covered with starch powder, and kept in a well-stoppered bottle. Each pill will contain 25 centigrammes of the oil. Thus prepared, the pills are said not to distress the stomach, to be easily digested, and not to cause disagreeable eructations.

An Application to Corns.

"A correspondent in Illinois writes us: 'I find in the *Medical and Surgical Reporter* of Jan. 25, 1873, a cure for corns, and as that remedy (green peach-tree leaves) could not be easily obtained at present in this climate, and as corns are most troublesome in winter, I would suggest a remedy equally effective and obtainable at any time. It is castor oil applied to the corn after paring closely each night before going to bed. It softens the corn, and it becomes as the other

flesh. It will cure every time."—*Med. and Surg. Reporter.*

Freckles.

For the benefit of young persons afflicted with freckles, we would inform them that powdered nitre, moistened with water, applied to the face night and morning, will soon remove all traces of them.—*Druggists' Circular.*

The following lotion is also recommended for the removal of freckles:—

℞ Hyd. perchlor.....gr. v.
Acid hydrochlor.....gtt. xxx.
Sacch. alb..... ℥ i.
Spt. vini rect..... ℥ ij.
Aquæ rosæ..... ℥ vij.
M.

Turpentine Soap.

Take powdered Castile soap and oil of turpentine, of each six parts; carbonate of potash, one part. Beat together in a uniform mass to form an ointment. This is the External Balsam of Life of the Germans.—*Amer. Jour. Pharm.*

Suppositories Lined with Tin Foil.

In the *Amer. Jour. Pharm.* for May, W. B. Arlington advises the mould to be lined with tin foil, by transferring the foil to the mould from a plug of conformable shape. The ingredients are then poured in, and the suppository is withdrawn with facility and the foil easily removed.

Lotion of Acetic Acid for Baldness.

The following lotion is said to be superior for a shampooing liquid, for removing dandruff, and useful and pleasant application for baldness. It is, of course, moderately stimulating, and in those cases in which the hair-follicles are not destroyed, but have become merely inactive, we should think it might prove both efficacious and agreeable:—

Take of acetic acid..... 1 drachm.
Cologne water..... 1 ounce.
Water, to make in all.... 6 ounces.
M. —*Exchange.*

Falling of the Hair.

The most satisfactory treatment is the use of tannin, one and a half scruples; adeps, one ounce; oleum sabinæ, gtt. v.-xxx. to one ounce. Adeps has this effect still more decidedly, but causes the hair to become harsh, stiff, and of a dirty color, and has an unpleasant odor. It sometimes causes severe headache.—*Druggists' Circular.*

Anti-Opium Pill.

We give below the formula for an "anti-opium pill" which has been used for several years in the English hospital, at Pekin, China, and its efficacy proven in numerous instances, but of which we have no actual knowledge:—

℞ Henbane. ..... ¼ grain.
Gentian..... ½ "
Quinine..... ¼ "
Ginger..... ½ "
Camphor..... ½ "
Cayenne..... ½ "
Cinnamon..... ½ "

Soap and syrup for coating. Three pills a day.

—*The Druggist*, July 15, 1873.

Sinapisms.

In making a mustard plaster, use no water whatever, but mix the mustard with the white of an egg, and the result will be a plaster which will "draw" perfectly, but will not produce a blister even upon the skin of an infant, no matter how long it is allowed to remain upon the part.—*The Medical Brief.*

Formulæ for Elixirs,

As prepared by Mr. O. Eberbach, of Ann Arbor, Michigan:—

Simple elixir. Take of

Moist fresh orange-peel ..... ℥ ij.
Star anise, in fine powder..... ℥ ss.
Cardamon, in fine powder..... ʒ i.
Dilute alcohol, sufficient.
Simple syrup..... ℥ vi.
Caramel..... grs. x.

Reduce the orange-peel to a fine pulp, then add the star anise and cardamon; pack quite firm in a glass percolator, and pour on diluted alcohol until six ounces of tincture have passed, then add the caramel and syrup, with water sufficient to make up one pint, and filter.

Elixir of calisaya. Take of

Crude alkaloids of calisaya, grs. xlviij.
Citric acid.....grs. xiiss.
Simple elixir.. ..... ℥ xvi.

Triturate the alkaloids with the acid until thoroughly mixed, then with the elixir, and filter.

Ferrated elixir of calisaya is made by adding to a pint of this elixir 128 grains of pyrophosphate of iron. Strychnia may also be added, in the proportion of two grains to the pint. The strychnia should be first rubbed up with citric acid (6½ grains), and dissolved in a fluid ounce of the elixir, by the aid of heat.

Ferrated elixir of gentian. Take of

Gentian, in fine powder..... ℥ i.
Licorice root, in powder..... ℥ i.
Moist fresh orange-peel..... ℥ ij.
Star anise, in fine powder..... ʒ ss.
Cardamon, in fine powder ..... ʒ i.
Pyrophospate of iron..... ʒ ij.
Dilute alcohol and water, each, sufficient.
Syrup..... ℥ vi.

Bruise the orange-peel to a fine pulp; mix with the powders; pack in a glass percolator, and pour on dilute alcohol till six ounces of percolate are obtained. Dissolve the pyrophosphate of iron in water; add water to the measure of four ounces; add the syrup, and mix with the percolate, and filter.

Elixir of valerianate of ammonia. Take of

Valerianate of ammonia..... ℥ ss.
Simple elixir .....Oi.
Water of ammonia sufficient.

Dissolve the valerianate in two ounces of the elixir, carefully neutralize with water of ammonia, and add to the remainder of the elixir.

New Mode of Prescribing.

M. Jean Paul Bonsieur, of Cincinnati, advises what may be called the one-dose prescription plan, *i.e.*, to write only as much of each constituent as shall be required in each dose; these can then be left to be multiplied by a common multiple, placed on the margin; for instance:—

℞ Ferri redacti....gr. i.;
Quin. sulph.....gr. ss.;
Ext. gentian....gr. i. } x 120.

The prescription being understood to indicate a dose. The only directions needed will be the length of time between each dose.

The menstruum can be left to the judgment of the pharmacist.

Combination for Chronic Diarrhœa.

Rayer (*Union Médicale*) advocates the combination of cinchona, charcoal, and bismuth in the management of chronic diarrhœa in these proportions: Subnitrate of bismuth, ʒ i.; Cinchona, yellow, powdered, ʒ ss.; Vegetable charcoal, ʒ i. M. Chart. xx. S. Two or three times daily during the intervals between meals.

Glycerole for Chapping of the Skin.

℞ Oxide of zinc .....gr. xx.
Tannic acid.....gr. xv.
Glycerine .....ʒ ix.
Tincture of benzoin. ʒ ss.
Camphor ....gr. xv.
M.

GENERAL RECEIPTS.

English Ginger-Beer.

Although cooling beverages will not be in general demand by the time this number of the Journal reaches our friends, the subjoined recipes for ginger-beer, which we find in one of our English exchanges, may not be unacceptable:—

1. Jamaica ginger two and a half ounces, moist sugar three pounds, cream tartar one ounce, the juice and peel of two middling-sized lemons, brandy half a pint, good yeast a quarter of a pint, water three and a half gallons. This will produce four and a half dozen of excellent ginger-beer, which will keep twelve months. Bruise the ginger and smash the sugar, and boil them for twenty or twenty-five minutes in the water; slice the lemon, and put it and the cream of tartar in a large pan; pour the boiling liquor upon them, stir it well round, and when milk-warm add the yeast, cover it over, and let it remain two or three days to work, skimming it frequently; then strain it through a jelly bag into a cask, add the brandy, bung down very close, and at the end of a fortnight or three weeks draw it off and bottle, and cork very tight, tying the corks down with string or wire. If it does not work well at first, add a little more yeast, but be careful of adding too much, least it should taste of it. N.B.—Strain it.

2. Citric acid three drachms, Jamaica ginger one ounce, loaf sugar one pound, essence of lemon-peel half a drachm. Into a large jug or pan put the sugar, then drop in the essence of lemon-peel, and add the citric acid and the ginger bruised. Upon these pour one gallon of boiling water. When of a moderate warmth, put in a half round of fresh toasted bread, well spread over with thick yeast on both sides, having previously stirred the beer. Leave it to ferment for two days, then bottle it off, and tie it down. N.B.—Strain it.

3. A pound and a half of lump sugar, one ounce of ginger, one ounce of cream of tartar, and one lemon cut in thin slices; pour over six quarts of boiling water. Add, when nearly cool, two tablespoonfuls of good yeast, and bottle next day. N.B.—Strain it.

Syrup of the Phosphates.

"Chemical Food," the formula of Professor Parrish—

℞ Ferri sulph..... ʒ x.
Sodæ phosph.,
Calcis phosph., āā..... ʒ xij.
Acid phosph. glacial.. ʒ xx.
Sodæ carb..... ℈ij.
Potassæ carb..... ʒ j.
Pulv. cocci cact..... ʒ ij.
Sacch. alb..... ℔ij., ʒ xviij.
Aquæ flor. aurant.... ʒ j.
Acid. hydrochlor.,
Liq. ammon.,
Aquæ dest., āā..... q.s.

Dissolve the sulphate of iron in ℥ ij., and the phosphate of sodium in ʒ iv. of boiling water. Mix the solutions, and having collected the precipitated phos-

phate of iron on a filter, wash it with distilled water till the washings cease to have taste. Mix the phosphate of calcium with ℥ iv. of boiling water, and add sufficient hydrochloric acid to dissolve it. When cold, precipitate with ammonia, and wash the precipitate. Mix the two phosphates together, and add the phosphoric acid, previously dissolved in water. When cold, add the carbonates of potassium and sodium, dissolved in water, and enough hydrochloric acid to dissolve the precipitate. Dilute with water to ℥ xxij., add the sugar, and lastly the cochineal. Dissolve by the aid of a gentle heat, strain, and when cold add the syrup of orange-flower.

Contains 2½ grains ferri phosph.
1 grain calcis phosph. } in ℥ i.

Aromatic Tincture of Assafœtida.

Mr. L. Myers Connor, in the *American Journal of Pharmacy*, suggests the following formula for a less disagreeable form of administering assafœtida than is usually employed.

℞ Tinct. assafœtida, U.S.P... ℥ viij.
" orange-peel, " ... ℥ ij.
Ess. peppermint..... ℥ iij.

Mix.—Dose, one and a half to two fluid drachms, without the addition of water.

Cement for Decayed Teeth.

Le Moniteur des Produits Chimiques publishes the following formula, patented by M. O. Barbaut:—

Calcined magnesia..... 1 part.
White oxide of lime..... 2 parts.

Add 1 part sulphate of morphia to every 30 parts of the mixture.

Preserving Microscopic Preparations.

Acetate of potash is said to possess many advantages over glycerine for this purpose.

Adhesive Plaster.

M. Eng gives the following formula for the preparation of an adhesive plaster:—

Powdered gum dammar....	560 parts.
Oil of sweet almonds.....	140 "
Castor oil.....	70 "
Glycerine.....	30 "
Aniline red.....	q. s.
Spirit of ether (equal quantities of ether and spirit)	225 to 240 "

The first four ingredients are to be heated in a copper vessel until the resin is fused, the aniline red then added, and when the mixture has half cooled, the spirit of ether is to be poured in. An emulsive liquid is thus formed of the consistence of syrup. A layer is then spread on a material previously coated with mucilage of starch, flour, or isinglass. The court plaster so made is said to be strongly adhesive, bright and shining, and to be free from any irritating effect on the skin. It does not dry up like ordinary court plaster, contains no lead, and may be spread upon calico, silk, gutta-percha, or paper. It also allows of the introduction of any substance soluble in alcohol or ether.—*L' Union Pharmaceutique.*

To extract Grease-Spots from Books or Paper.

Gently warm the greased or spotted part of the book or paper, and then press upon it pieces of blotting-paper, one after another, so as to absorb as much of the grease as possible. Have ready some fine, clear essential oil of turpentine, heated almost to a boiling state; warm the greased leaf a little, and then with a soft, clean brush, wet with the heated turpentine, both sides of the spotted part. By repeating this application the grease will be extracted. Lastly, with another brush, dipped in rectified spirits of wine, go over the place, and the grease will no longer appear, neither will the paper be discolored.—*The American Chemist.*

To restore Color to Fabrics.

When the color of a fabric has been accidentally or otherwise destroyed by acid, ammonia is applied to neutralize the same, after which an application of chloroform will in almost all cases restore the original color. The application of ammonia is common, but that of chloroform is but little known. Chloroform will also remove paint from a garment or elsewhere, when benzol or bisulphide of carbon fails.—*Journ. of Applied Chem.*

Removal of Glass Stoppers.

It may may not have occurred to every one—at all events it is not noticed in any of our treatises on practical pharmacy—that the easiest way to take out a stopper which has become fixed in the neck of a bottle is to reverse the motion given to it when putting it in, that is, to knock the stopper from *right* to *left*. In most instances when a stopper is fixed, without the intervention of an adhesive substance, it is by turning it as one would drive a screw. The direction is almost invariably from left to right, and thus a thread is formed, which it is easier to follow backwards than to break. The trouble with which the removal of stoppers is usually attended must form my apology for introducing a suggestion of so little apparent importance.

Chinese Varnish.

The Chinese make an impervious varnish by mixing three parts of defibrinated blood, four of quicklime, and a little alum. A glutinous substance is thus obtained which is waterproof when applied as a varnish.

To restore Adhesive Plaster.

According to Otto Facilides, adhesive plaster which has become brittle by age, and has lost its adhesive qualities, may be rendered adhesive again by coating it with oil of turpentine, by means of a sponge, and leaving it exposed for a day.—*Am. Practitioner.*

Composition of Valentine's Preparation of Meat-Juice.

BY WILLIAM H. TAYLOR, STATE ASSAYER VIRGINIA.

Water	61.12
Organic Substances	27.90
Containing—	
Uncoagulated albumen	1.11
Fat	.13
Creatin, creatinin, and other organic constituents of flesh-juice and blood	26.66
Inorganic substances	10.98
Containing—	
Chloride of sodium	1.42
Sulphate of potash	.52
Phosphate of iron, lime, and magnesia	1.21
Phosphates of potash and soda	7.83

—*Virginia Clinical Record.*

Simple Process for Nickel Plating.

Prof. F. Stolba communicates a plan for nickel-plating, by the action of zinc upon salts of nickel in the presence of chloride of zinc and the metal to be coated. By this process, the author informs us, he has succeeded in plating objects of wrought and cast iron, steel, copper, brass, zinc, and lead. It is only necessary that the size of the objects should permit them to be covered entirely by the plating liquid, and that their surfaces should be free from rust or grease. The following is the *modus operandi*:—

A quantity of concentrated chloride of zinc solution is placed in a cleaned metallic vessel, and to this is added an equal volume of water. This is heated to boiling, and hydrochloric acid is added, drop by drop, until the precipitate which had formed on adding water has disappeared. A small quantity of zinc powder is now

added, which produces a zinc coating on the metal as far as the liquid extends. Enough of the nickel salt (the chloride or sulphate answers equally well) is now introduced to color the liquid distinctly green; the objects to be plated are placed in it, together with some zinc clippings, and the liquid is brought to boiling.

The nickel is very soon precipitated, and in course of fifteen minutes, if the work has been properly performed, the objects will be found completely coated. The coating will vary in lustre with the character of the metallic surface; where this is polished the plating will be likewise lustrous, and *vice versa*.

Varying the process by the addition of a salt of cobalt, instead of nickel, will afford a cobalt plating, which the author informs us is steel-gray in color, less lustrous, and more liable to tarnish than the nickel.—*Journ. Frank. Inst.* from *Dingler*.

Furniture Polish.

Scrape one pound of beeswax into shavings and place in a pan; add half a gallon spirits of turpentine, and one pint linseed oil. Let it remain twelve hours, then stir it well with a stick into a liquid; while stirring, add one-quarter pound shellac varnish and one ounce alkanet root. Put this mixture into a gallon jar, and stand it before the fire, or in an oven, for a week (to keep it just warm), shake it up three or four times a day. Then strain it through a hair-sieve and bottle it. Pour about a teaspoonful on a wad of baize, go lightly over the face and other parts of mahogany furniture, then rub briskly with a similar wad dry, and in three minutes it will produce a dark brilliant polish unequalled. Another preparation may be made as follows: Make a mixture of three parts linseed oil and one part spirits of turpentine. It not only covers the disfigured surface, but restores wood to its original color and leaves a lustre upon the surface. Put on with a woollen cloth, and when dry rub with woollen.—*Canada Phar. Jour.*, Jan., 1873.

Test of Pure Air.

Dr. Angus Smith gives a good rule for ascertaining the amount of carbonic acid in the air of houses: "Let us keep our rooms so that the air does not give a precipitate when a 10½ ounce bottleful is shaken with half an ounce of clear lime-water;" a sanitary regulation which is easily carried out.

A Perfect Waterproof.

A writer in an English paper says: "By the way, speaking of waterproofs, I think I can give travellers a valuable hint or two. For many years I have worn India-rubber waterproofs, but will buy no more, for I have learned that good Scottish tweed can be made entirely impervious to rain, and, moreover, I have learned how to make it so; and, for the benefit of your readers, I will give the recipe:—

In a bucket of soft water put half a pound of sugar of lead and half a pound of powdered alum; stir this at intervals until it becomes clear, then pour it off into another bucket and put the garment therein, and let it be in for twenty-four hours, and then hang it up to dry without wringing it. Two of my party, a lady and gentleman, have worn garments thus treated in the wildest storms of wind and rain without getting wet. The rain hangs upon the cloth in globules. In short, they were really waterproof. The gentleman, a fortnight ago, walked nine miles in a storm of rain and wind such as you rarely see in the south; and when he slipped off his overcoat his underclothes were as dry as when he put them on. This is, I think, a secret worth knowing; for any cloth, if it can be made to keep out wet, is in every way better than what are known as waterproofs."—*Druggists' Circular*.

A New Hygrometer,

Made in Paris by G. Smith, consists of strips of paper dipped in a cobalt salt solution containing common salt and gum Arabic. In dry weather it is blue, and in wet, rose-red.

Liquid Glue.

An excellent liquid glue can be made by dissolving glue in nitric ether. This ether only takes up a certain quantity of glue, so that there is no danger of the solution being too concentrated. The glue obtained in this way can be made to have the consistency of molasses, and its tenacity is said to be twice that dissolved in hot water. A few pieces of India-rubber of the size of a bullet put into the glue and well shaken will dissolve in a few days, and add to the adhesiveness of the preparation, as well as protect it from the action of moisture.

Waterproof Glue.

A glue capable of resisting the softening action of water is much sought after, and, as it would appear from frequent inquiries, without much if any success. The composition given below is said to answer the purpose:

Take of gum sandarac	1 ounce.
" mastic	1 "
White turpentine	1 "
Alcohol	1 pint.

The gums are to be dissolved in the alcohol and the turpentine added. The solution of the gums is to be heated in a glue-pot to boiling, and a thick glue solution, containing a little isinglass, is to be gradually poured into the pot and constantly stirred to make the whole homogeneous. It is now to be strained through a cloth, and is then ready for uniting surfaces together.

A Universal Pharmacopœia.

At the Medical Congress which will meet this year at Vienna, a proposal of great importance will be made by MM. De Christoforis Malachia, chief physician to the great hospital at Milan, and Ludovic Zambeletti, pharmaceutical chemist in Milan, to the effect that there should be a universal pharmacopœia. If the experience of the English committee on this subject is of any value, the committee to be appointed at Vienna have a tolerably arduous task before them.—*Lancet.*

A New Indelible Ink.

The oily sap of the anacardium nut can be employed for marking cotton and linen goods with an indelible ink, as the color cannot be removed by alkalies or acids, and, in fact, is improved in intensity by the former. The preparation is best made by extracting the crushed nuts with petroleum benzine, and leaving the liquid to digest at a moderate temperature for some time, and then to allow the volatile ether to evaporate in the open air. If we print with the sirupy residue on linen or woollen goods, at first the color is of a faint dirty brown; if it then be moistened with sal-ammoniac or lime water, it immediately turns deep black, and cannot be bleached or removed by chloride of lime, cyanide of potassium, caustic alkalies, or acids. A good writing fluid has been prepared from the same nut.

How to swallow a Pill.

The *Chicago Medical Times* is responsible for the following:—"Put the pills under the tongue and behind the teeth, and let the patient immediately take a large swallow of water, and he will neither feel the pill nor taste it. In fact, they cannot tell where it has gone, and I have seen them look about the floor to see if they had not dropped it."

To disguise Castor Oil.

Rub up two drops oil of cinnamon with an ounce of glycerine, and add an ounce of castor oil. Children will take it and ask for more.—*Druggists' Circular.*

To render Paper and Cloth Water Proof.

The addition of bichromate of potash of glue or gelatine renders them insolu-

ble in water. Thus paper, cotton, linen, or silk goods, once dipped in this insoluble glue, become completely impermeable. To give this property to glue or gelatine all that is required is to add to them one part of the bichromate in solution to five parts of glue, the addition being made at the time of using them. It is also necessary that the application should be made in the sunlight. The Japanese make their umbrellas of paper prepared by this process.—*Bordeaux Méd.*

The Ink of the Ancients.

In a letter from Mr. Joseph Ellis, of Brighton, addressed to the *Society of Arts Journal*, he states that, by making a solution of shellac with borax in water, and adding a suitable proportion of pure lamp-black, an ink is produced which is indestructible by time or chemical agents, and which on drying will present a polished surface, as with the ink found on Egyptian papyri. He made ink in the way described, and proved, if not its identity with that of ancient Egypt, yet the correctness of the formula, which was given him by the late Mr. Charles Hackett.

Wash-Bottles as a Source of Fire.

Under the above title Dr. H. C. Bolton, of Columbia College, publishes a notice of the heating effects produced by the concentration of the sun's ray in passing through a flask of distilled water. One morning the doctor was surprised and a little frightened to find the table in his laboratory smoking and partially charred, where the rays of the sun were focused by a large flask of water.

The large show-bottles in druggists' windows sometimes play the part of burning-glasses so well as to ignite the curtains and endanger the articles in the window. This, of course, would not be likely to take place with the blue and violet bottles; plain bottles act more powerfully than figured ones. The contents also affect the results; a perfectly spherical flask of plain glass could not, under the most favorable conditions, produce heat enough to ignite gunpowder, if filled with a solution of alum. On the other hand, the temperature of the bottle may be left out of account; a lens of clear ice makes an excellent burning-glass, as was shown by Professor Tyndall in one of his lectures.

Means of preserving Fabrics, etc., from Fire.

M. Patera proposes, instead of sodic tungstate, a mixture of four parts borax with three parts magnesic sulphate. 100 grms. of the mixture are to be dissolved in 300 to 400 c.c. of water, and into this solution the fabrics are placed until soaked, then wrung out, dried, and ironed. Another mixture proposed for the purpose is that of ammonic sulphate and gypsum.

Still another method is the following:—

Carteron and Rimmel have taken out a patent in England for the use of acetate of lime and chloride of calcium, for rendering goods non-combustible. Equal weights of each are dissolved in twice their weight of hot water.

East India Method of Cleaning Silver.

The East Indian jewellers never touch silver ware with any abrasive substance. For all articles of the kind, even the most delicate, the method of cleaning they adopt is as follows:—Cut some juicy lemons in slices; with these rub any large silver or plated article briskly, and leave it hidden by the slices in a pan for a few hours. For delicate jewelry the Indians cut a large lime nearly in half, and insert the ornament; they then close up the halves tightly, and put it away for a few hours. The articles are then to be removed, rinsed in two or three waters, and consigned to a saucepan of

nearly boiling soapsuds, well stirred about, taken out, again brushed, rinsed, and finally dried on a metal plate over hot water, finishing the process by a little rub of wash-leather (if smooth work). For very old, neglected, or corroded silver, dip the article, with a slow stirring motion, in a rather weak solution of cyanide potass.; but this process requires care and practice, as it is by dissolving off the dirty silver you obtain the effect. Green tamarind pods (oxalate of potash) are greater detergents of gold and silver articles than lemons, and are much more employed by the artisan for removal of oxides and fire-marks.

Horse-radish.

A correspondent of *The Garden* (London) says: "It may not be generally known that if leaves or litter be placed on the tops of horse-radish crowns two feet or so thick, the plants grow through them in the course of the summer, making small white roots the thickness of one's finger, which are as tender as spring radishes, and much to be preferred to the tough, stringy stuff usually supplied with our roast beef."

A New Winter Salad.

The same excellent authority gives the following: "Ordinary buckwheat, grown in a moderately warm greenhouse, and cut like mustard when about two or three inches high, makes a delicious winter salad. It can be grown in pans all the year round without the least trouble, and even when lettuces are plentiful will be found a very desirable addition to the salad bowl."

Pharmaceutical Curiosities—Spiritus Cerebri Humani.

"The brain of a young man, well built and perfectly healthy, but who has been put to death by some violent means, must be crushed with all vasculars and the spinal marrow in a stone mortar, afterwards mixed in a glass retort or large phial with 'Kaiser Karl's Hauptwasser' (something similar to our Eau de Cologne) and spirit of wine; this mixture is to be distilled, after having stood by for one, or, better, for several years." The dose of this elegant remedy was fixed at a table-spoonful.—*Aqua Florum Omnium.* (The process adopted is remarkable for its simplicity and logical accuracy.) "Send a cow into a meadow full of flowers, and when she has eaten all the flowers gather the dung, distil it, and you have the water of all flowers."—*Dispensatorium Borusso Brandenburgicum*, A.D. 1731 (the first edition of the Prussian Pharmacopœia).

BIBLIOGRAPHY.

HAND-BOOK OF PHYSIOLOGY. By WILLIAM STENHOUSE KIRKES, M.D. Edited by W. MORRANT BARKER, F.R.C.S., etc. With two hundred and forty-eight illustrations. A new American from the eighth enlarged English edition. Philadelphia: Henry C. Lea. 1873.

No work on physiology with which we are acquainted is so deservedly popular in this country as the hand-book of Dr. Kirkes. The six hundred and fifteen pages of the new edition embrace a fair and well-written statement of the science as we understand it at the present time, and show numerous changes from the last edition; the most considerable of them being in the chapters relating to the liver, the lymphatic system, the spleen, the skin, and the nervous system.

THE MEDICAL TIMES, a new weekly medical journal of eight pages, is issued in Kingston, Ont., the editor being Dr. NEISH. Its price is $2.00 a year.

THE MEDICAL BRIEF is the title of a new monthly, published at Wilson, N. C., by J. J. LAWRENCE, M.D., who is both editor and proprietor. It is devoted to practical medicine, chemistry, pharmacy, and hygiene, and is furnished for $1.00 a year, in advance. It consists of thirty-two pages, and is to be enlarged to fifty with the October number.

CHARLESTON MEDICAL JOURNAL AND REVIEW. Edited and published by F. PEYRE PORCHER, M.D., and R. A. KINLOCH, M.D. New Series. Charleston, S. C.: H. P. Coke & Co. 1873.

THIS is an exceedingly well-edited quarterly of about a hundred pages, and in its reviews and abstracts does the editors credit. The number before us contains the address of Prof. Satchwell before the Alumni Association of the Medical Department of the University of New York at their last meeting, together with half a dozen original articles by prominent Southern surgeons and physicians.

CLINICAL NOTES FROM PRIVATE PRACTICE. By JOHN HERBERT CLAIBORNE, A.M., M.D. Petersburg, Va.: John Van Holt Nash. 1873.

THE author has selected about one hundred and fifty cases from the running notes which it has been his habit to keep during twenty years of private practice, and having arranged them in groups, accompanied with suggestions and ideas of his own, he has succeeded in making an exceedingly interesting book in spite of almost numberless mistakes in nomenclature, grammar, Latin, and orthography. The work will be especially valuable to physicians living in localities where malaria is an element to be considered in the causes of many diseases, or as influencing their course. Not the least merit of the book is its marked individuality; although many instances occur in which most physicians would hesitate to accept as correct the opinions expressed by its author.

CHEMISTRY, INORGANIC AND ORGANIC: with Experiments. By CHARLES LOUDON BLOXAM, Professor of Chemistry in King's College, London, etc. With two hundred and ninety-five illustrations. From the second and revised English edition. Philadelphia: Henry C. Lea. 1873. 8vo, pp. 700.

AN interval of five years has elapsed since the publication of the first edition of

the above work, since when the introduction of the atomic system of notation has obliged the author to make considerable changes in the text as well as in the arrangement of material. This the author appears to have done as a matter of necessity, and not from choice; regarding the new system as calculated to develop a mode of study similar to that required in pursuing a course in mathematics, rather than the cultivation of the habit of observation by experiment, by means of which alone can a knowledge of chemistry or its allied sciences be acquired. In this edition the author says he has endeavored to preserve, as far as possible, the simple and experimental character of the work, and at the same time to employ formulæ in harmony with those now generally used. Taking advantage of the present uncertainty of agreement regarding chemical nomenclature, the author retains that of the former edition, deeming it of great importance that the names by which chemical compounds are known in common life should be kept before the student in a chemical treatise.

The book contains numerous cuts relating to the employment of chemistry in the arts, and its experimental character is made prominent by the number of practical illustrations which accompany each subject. A rather novel and very valuable feature of the work is the manner in which the index is arranged, so as to serve as a dictionary of the most important formulæ, in which either the name of a compound may be referred to, in order to find its formula, or the formula may be sought when it is desired to ascertain the compound to which it belongs.

TRANSACTIONS OF THE MINNESOTA STATE MEDICAL SOCIETY, 1873. Minneapolis: Johnson & Smith. 1873.

THIS is a handsomely printed pamphlet of one hundred and twenty pages, containing the papers and reports of committees read at the semi-annual meeting of the society held at Rochester, Minn., June 11th and 12th, 1872, and at the annual meeting at St. Paul on the 4th and 5th of February, 1873.

A MANUAL OF MEDICAL JURISPRUDENCE. By ALFRED SWAYNE TAYLOR, M.D., F.R.S., Prof. of Med. Jurisp. in Guy's Hospital, etc. Seventh American edition. Edited by JOHN J. REESE, M.D. Philadelphia: Henry C. Lea. 1873. 8vo, pp. 879.

THE seventh edition of this standard work has been ably prepared for the American market by the well-known professor of medical jurisprudence and toxicology in the University of Pennsylvania. The additions of new matter amount in all to about one hundred pages, most of which has been taken from advance sheets of a new edition of the author's larger work on "The Principles and Practice of Medical Jurisprudence." Besides the notes added by former American editors are a considerable number by Professor Reese, most of them occurring in the first part of the book, and relating to the nature of evidence and the examination of the cadaver and of substances supposed to contain poison. Points of interest connected with the famous Wharton trials are introduced. Under the head of "Poisoning by Arsenic," an important note by Prof. Reese calls attention to the fact that this substance exists in large proportion in many samples of commercial subnitrate of bismuth, and may in certain cases cause the symptoms sometimes attributed to the latter. Regarding the general character of the work no comment is necessary, since the book is to be found in the hands of a majority of physicians throughout the country. The new matter introduced with this edition renders it correspondingly superior to former ones.